AMERICAN YACHTING

By

W. P. STEPHENS

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For

Blunt and Marion

From

Eleanor Stephens

Because Blunt knew
and so greatly admired
my father.
April 1956.

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EDITED BY

CASPAR WHITNEY

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BY

W. P. STEPHENS

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INTRODUCTION

In spite of the utilitarian tendencies of the present age, it is fortunately no longer necessary to argue in behalf of sport; even the busiest of busy Americans have at last learned the necessity for a certain amount of relaxation and recreation, and that the best way to these lies in the pursuit of some form of outdoor sport. While each has its stanch adherents, who proclaim its superiority to all others, the sport of yachting can perhaps show as much to its credit as any.

As a means to perfect physical development, one great point in all sports, it has the advantage of being followed outdoors in the bracing atmosphere of the sea; and while it involves severe physical labor and at times actual hardships, it fits its devotees to withstand and enjoy both.

In the matter of competition, the salt and savor of all sport, yachting opens a wide and varied field. In cruising there is a constant strife

with the elements, and in racing there is the contest of brain and hand against those of equal adversaries. As a mere matter of healthy and exciting exercise, an hour at the tiller of a yacht in a thrash to windward will compare favorably with any other form of active sport.

In material and physical points yachting has much to commend it to the leading place in the list of sports; but, unlike many others, it goes much further, and can fairly claim a place among the arts and sciences as a purely intellectual pursuit. The science of yacht designing, a branch of yachting which many amateurs follow as a recreation, offers an unlimited field for study and research, both in the line of the governing principles of naval architecture, and of their application to the creation of successful vessels. The man who can design his own yacht, large or small, construct her, or at least plan and supervise the construction, and, finally, can guide her to the head of the fleet with his hand on the tiller and his active brain anticipating and checking each move of clever opponents, may well lay claim to one of the highest achievements within the reach of any sportsman.

The importance of yachting to a maritime nation such as ours can hardly be overestimated. It is a stimulus to the advancement of naval architecture such as is necessary in maintaining the naval and merchant fleets at the highest standard; it is a training school for seamen, both amateur and professional; and its mimic battles for the different international trophies — that first awakened and now keep alive a thoroughly national interest in maritime supremacy — are constant reminders of the necessity for perpetual progress in all details of naval development.

The history of American yachting is more than a mere dry record of victor and vanquished; it is a summary of material progress in naval architecture and seamanship, of researches and discoveries that have redounded to the immediate benefit of the nation and ultimately of the world at large. At the same time it is a story of hard-fought battles, of some defeats that have been turned to profit in the end, and of many notable victories.

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AMERICAN YACHTING

CHAPTER I

EARLY AMERICAN YACHTS

The designation of "yacht" is applied to a vessel not merely on account of her model and equipment, but largely from her use exclusively as a pleasure craft. The famous *America* was essentially a pilot-boat in model and construction, as well as in deck and interior fittings; and the yachts of a more remote period were practically working vessels, of one kind or another, devoted to pleasure use by wealthy owners. It is, consequently, a difficult matter to identify as yachts the vessels first used for pleasure sailing. There are vague traditions of yachts in use in the eighteenth century, and doubtless some of the old Dutch burghers of Nieuw Amsterdam made pleasure cruises on the Hudson River at a far earlier date; but the first definite records begin with the advent of the nineteenth century. As early as 1816 there was built for an American

yachtsman a most remarkable vessel, — a yacht not only by use but by special design and furnishing, in which a long foreign cruise was made. Fortunately the full particulars of the yacht and her cruise have been preserved to the present time.

The owner, Captain George Crowninshield, of Salem, Massachusetts, a typical American and a notable man in his day, was one of a family of East India merchants, — the trade of China and the East Indies then centring in the prosperous little seaport of Salem, on Massachusetts Bay. Each successive generation of Crowninshields was brought up after the custom of the time with the New England merchants, beginning with a common-school education which, ending at the age of eleven or twelve, included a thorough knowledge of theoretical navigation. Thus prepared, they were sent to sea before they were more than twelve years old, either before the mast or as captain's clerk.

At the age of twenty such a boy was expected to command his own ship, making voyages of one or two years' duration, the success of which depended no less upon his skill as a seaman than upon his business ability in the handling

of valuable cargoes: that shipped at home being disposed of in the far East, and the return cargo being carried to some European port, where it would in turn be exchanged for a third, which would ultimately be landed at Salem or Boston. After half a dozen years of this work, the young skipper usually left the sea to take his place in the family counting-room as a junior member of the firm. It is this ancestry above all else that has given to Boston yachting that magnificent vitality so strongly in evidence at the present day in the devotion to real sailing and racing in the smaller classes of yachts.

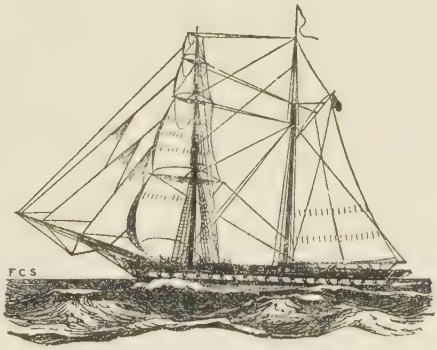
Captain George Crowninshield was born in 1766, one of six brothers, the sons and grandsons of merchant sailors. One of these died at Guadeloupe at the age of fourteen, being then ship's clerk on a Salem vessel, and the other five were all captains before they were twenty years of age. When the time came for him to leave the sea and enter the firm, Captain George devoted himself to the very important work of supervising the building and fitting out of the ships, his tastes lying in this direction. It was while thus engaged, in 1801, that he had built, by Christopher Turner of Salem, a sloop of 22

tons, named *Jefferson*, which he used as a yacht. Some idea of the size of this craft may be obtained from her subsequent history. She was the second vessel commissioned as a privateer in 1812, making one voyage with a crew of thirty and taking three prizes. In 1815 she was sold to Gloucester and used for many years as a fisherman.

On the death of the elder George Crowninshield, in 1815, the firm was dissolved, one of the sons, Benjamin, being then Secretary of the Navy under President Madison. Possessed of ample means, unmarried, and with nothing to occupy his time, George Crowninshield planned what would pass for a yacht, even at the present day. Some slight hint of the peculiarities of the vessel is given in her odd name, *Cleopatra's Barge;* at one time her owner proposed to call her *Car of Concordia.* The model was planned from that of the *America*, a very fast vessel of 600 tons, the finest of the old Crowninshield fleet, first famous as a merchant ship and then "razeed" and altered into a privateer during the War of 1812, winning new laurels. The builder of the new yacht was Retire Becket, a ship-builder known to his fellow-townsmen by

the familiar nickname of "Tyrey," famous for his fast merchant ships.

The work was begun in the spring of 1816, much care being taken in the selection and preparation of the timber cut in the woods of Essex County; the keel was laid in July and the yacht was launched on October 16. Every detail of hull, furniture, and rig was planned by the owner, many original ideas being introduced. The furniture was of very elaborate design, and special services of silver and glass were made for the yacht. She was launched with rigging rove and sails bent, and nearly all her fittings in place; but, through various delays, the original plan of sailing was changed, and she wintered at Salem. Here she was visited by persons from all the surrounding country, it being recorded that nine hundred inspected her on one day.



Cleopatra's Barge.

The dimensions of *Cleopatra's Barge* were 83 feet on the water-line, 23 feet breadth, and 11 feet 5 inches depth of hold, her tonnage being $191\frac{41}{95}$ tons. It is an interesting coincidence that these dimensions were almost exactly duplicated in the cutter *Mayflower*, built just seventy years later to defend the America Cup. One of the curious fads of the owner was the painting of the outside of the hull, one side in horizontal stripes of many colors, the other in a herring-bone pattern, also variegated. The cost was $50,000, a very considerable sum for the time, but the furnishing was especially costly and elaborate.

Throughout the winter Captain Crowninshield lived on board the yacht, entertaining in the generous fashion of the day, some of his visitors boarding her from sleighs as she lay in the ice of Salem Harbor. On March 30 she sailed, calling first at the Azores, then at Madeira and Gibraltar. The summer was spent in a cruise of the Mediterranean, many prominent persons being entertained on board, while casual visitors were admitted by hundreds; the log records that while at Barcelona eight thousand persons by actual count passed over the vessel.

The yacht dropped her anchor in Salem Har-

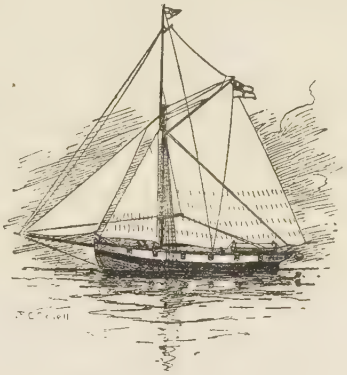
bor on October 3, 1817, the crew was discharged, and she was moored alongside Crowninshield's Wharf. Her owner continued to live on board, meanwhile planning a second cruise to England and the Baltic in the following spring; but on November 26 he was taken suddenly ill and died in a short time of heart disease. A most remarkable coincidence is that his intimate friend, Samuel Curwen Ward, his companion on the cruise, died in the town, but a short distance away, at almost the same moment. The yacht was sold at auction, bringing only $5000, and converted to a merchant vessel, making a voyage to South America, and later being used as a packet between Boston and Charleston, South Carolina. She was then used in the Pacific, being finally sold at the Sandwich Islands to King Kamehameha I, who used her as a royal yacht. After about a year she was wrecked through carelessness, and after lying neglected on a reef for months the hulk was finally taken to Honolulu, where it was visible for many years on the beach.

The history of this yacht is most interesting. She was in no way a gradual evolution, but apparently a spontaneous growth at a day when pleasure

craft were unknown in this country. She was not, like the early English yachts, a mere adaptation of the smaller naval vessels of the day, but she was planned throughout as a yacht. At the same time, in the personality of her owner and in her derivation from the representative merchant vessels and privateers of the day, she was a fitting exemplification of American progress. Born of such an ancestry as the Crowninshields, and cradled in such a craft as *Cleopatra's Barge*, it is in no way surprising that the sport of yachting in its highest form has ever flourished within the protecting arms of Cap Cod and Cape Ann.

The origin of yachting in New York is intimately intertwined, as in the East, with the history of one of the old Colonial families. Colonel John Stevens was born in New York City in 1749, he graduated from King's College, now Columbia, in 1786, and was admitted to the bar of the Colonial Provinces of New York and New Jersey in 1772. During the active period of the Revolution he was treasurer of the state of New Jersey. He purchased Hoboken, then an island of swamps and rocky hills, in 1784, establishing the family home on Castle Point, the beautiful promontory still overlooking the Hudson and

New York City, with the busy water front of Hoboken, the home of the present head of the family. As early as 1798 Colonel Stevens, with Chancellor Livingston, Nicholas J. Roosevelt, and Isambard Brunel, then an exiled French Royalist, but later known as the builder of the Thames Tunnel, inaugurated a series of experiments in the propulsion of vessels by steam on the Passaic River. Later on, in 1802–1804, Colonel Stevens produced an experimental boat, tried on the Hudson, with a most remarkable outfit for the day. The vessel was fitted with twin screws, each four-bladed and generally similar to those now in use; the engine moved at a relatively high speed, being directly connected to the propeller shaft; the boiler was of the multitubular type, using steam at a high pressure. In this primitive craft lay the genesis of modern marine engineering, and it is in no way due to the talented inventor, but solely to the lack of



English Cutter about 1820.

adequate shop facilities and accurate machine tools, that nearly half a century elapsed before his ideas were universally adopted.

The succeeding generation of the Stevens family included four brothers, John C., Edwin A., Robert L., and James. Inheriting all the mechanical tastes and ability of the father and with ample means at their disposal, they entered with zest into both work and sport. To them is due the successful use of anthracite coal, the T rail now universally used for railways, with the rolls for forming it, the development of the screw propeller, the improvement of the marine beam engine, and various inventions in the line of military and naval ordnance. Following up an invention of the father, a revolving turret plated with iron, they designed and built at their own expense the "Stevens Battery," — an enormous experimental armor-clad war-ship. They were active alike in the technical and business sides of the development of railways and of steam navigation on the Hudson and the Delaware; with all this they were ardent sportsmen, interested in horses, yachts, cricket, and field sports.

In the boyhood of the Stevens boys — John C.

was born in 1785 — there were no steam ferries, but the Hudson and the East rivers were crossed by rowboats, while Staten Island and points on the Kill von Kull were reached by means of the pirogue or "periagua," a flat-bottomed sailing craft used for ferriage. The Stevens boys were almost of necessity expert boatmen, crossing from their home to New York in their own rowing or sailing boats. As early as 1809 John C. Stevens owned a sail-boat of 20 feet length, named *Diver;* and in 1816 he built *Trouble*, a periagua of 56 feet length, with a flat bottom and round bilge; there was neither bowsprit nor jib, but one mast was stepped in the bow and the other amidships, each carrying a single sail. Four years later he experimented with a catamaran, *Double Trouble*, but she proved a failure.

There is a long gap in the records, which was probably filled by successively larger yachts, for in 1832 Mr. Stevens had built by Bell & Brown, ship-builders of New York, the schooner *Wave*, of 65 feet water-line, sold to the government in 1838 and used in the revenue service.

Between the years 1830 and 1840 the use of small sailing vessels for pleasure became quite

common, especially among such men of wealth as were connected with shipping, the late R. B. Forbes of Boston, one of another famous yachting family, being one of the leaders. These yachts followed in model the commercial vessels, pilot-boats, sailing packets, and fishing-boats of the day; among them were *Dream*, of 47 feet over all length, built by Webb & Allen, of New York; and *Sylph*, built in 1833, by Wetmore & Holbrook, of Boston, for John P. Cushing.

The next venture of Mr. Stevens, in 1839, was the schooner *Onkahie*, of 91 feet water-line and 250 tons, — quite a large yacht. She had a very fine bow in comparison with existing yachts, with an iron keel for stability. After a cruise to the West Indies she was sold into the revenue service in 1843, and five years later she was lost in the West Indies.

Fostered by such men as George Crowninshield and John C. Stevens, yachting by degrees made its way into popular favor about Boston and New York. The larger yachts were owned mainly by gentlemen in some way connected with shipping, but at the same time there were many whose taste for sailing was perforce indulged in a more modest way, and who had

recourse to the smaller craft, periaguas and fishing-boats, for pleasure sailing and later for racing. Environment naturally played a very important part in the development of types; while the rough waters of Massachusetts Bay called for a safe and seaworthy model, especially in the smaller yachts, and the many small harbors gave shelter for such craft, the comparatively sheltered waters of New York Bay, the Hudson, and the west end of the Sound permitted the use of the shoal and wide centreboard boat, and at the same time the most available anchorages for yachts were on the flats off Hoboken, Communipaw, and South Brooklyn, where all commerce was barred by the shoal water. Here yachtsmen found cheap and safe anchorage grounds, and they naturally adapted their models to them, reducing the draft of hull to the lowest possible limit.

CHAPTER II

GEORGE STEERS AND HIS WORK

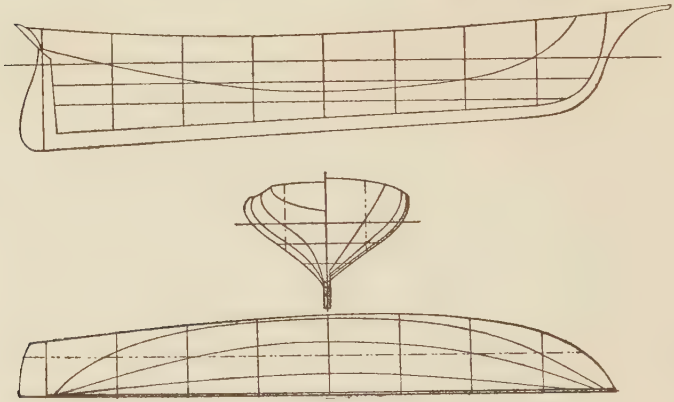
Old New York Pilot-boat.

As he progressed to larger yachts and more daring experiments, John C. Stevens became associated with another whose strong personality has left an indelible imprint on American yachting. George Steers was the son of an English shipwright, who learned his trade in the royal shipyard at Devonport and immigrated to this country in 1817, first settling in Washington and working in the Navy Yard there, and later, in 1823, moving to New York. Some of his thirteen children were born in England and others in this country. The date of George's birth is

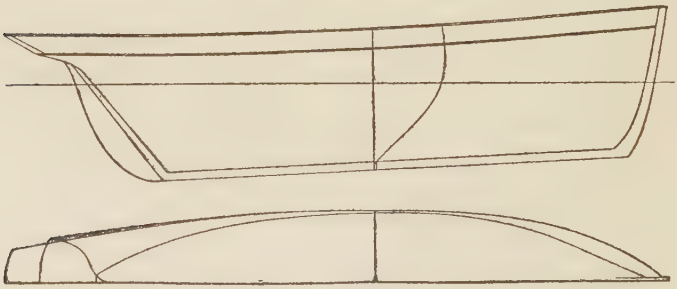
given as 1820, or just after the family was established in Washington. The boys of the family, James R., Henry T., Philip, and George, took naturally to their father's trade. When nineteen years old, George built for himself a yacht of 17 feet length, named *Martin Van Buren*, which was very successful; and a couple of years later he built for Mr. Stevens a very light rowing boat, for racing. Yacht designing, as it is now understood, was an unknown art at that day, but George Steers was probably grounded by his father in the ordinary principles of marine drafting and the laying down of vessels, and thus was better fitted for the work of modelling than many of his contemporaries. At the age of twenty-two he modelled the schooner yacht *La Coquille*, 44 feet 6 inches in length. Two years later he modelled the schooner *Cygnet*, 53 feet 2 inches in length, and with Mr. Stevens, the schooner *Gimcrack*. In 1847 he modelled and built the schooner *Cornelia*, of 74 feet, and the sloop *Una*, of 64 feet, a remarkable yacht.

Gimcrack, built by William Capes, in Hoboken, was a schooner of 51 feet over all length, 49 feet on the water-line, 13 feet 6 inches breadth,

5 feet 2 inches depth, and 7 feet 6 inches extreme draft, — some four feet of this being made up by



Cygnet, American Schooner.
George Steers, 1844.



Cygnet, British Cutter.
Wanhill, of Poole, England, 1846.

Typical yachts of two nations, showing full forward water-lines in use up to 1848–50, with straight raking keel and V section.

a plate of iron about twelve feet long, virtually a fin keel. That she is one of the historic craft of

American yachting is due not to her exceptional speed or excellent performance (she can hardly be termed a successful experiment), but because she was the cradle of the New York Yacht Club — the organization of the club being accomplished in her cabin on July 30, 1844.

It is impossible to dissociate the work of Stevens and Steers, or to give credit to one rather than the other. The older man lacked the immediate technical training of the younger, but he possessed a wide experience in yachting and at the same time both he and his brothers were closely in touch with the leading minds of this country and Europe and fully conversant with all new theories and inventions. The work of the younger man was restricted to the designing and building of different classes of vessels, his ultimate triumph being the United States frigate *Niagara*. His opportunities for study, research, and experiment were more limited than those of Mr. Stevens.

In those days of prosperous commerce and sailing packets the pilot-boat fleet was an important adjunct to the port of New York. Speed was an essential in these little ships, and yet at the same time their cruising ground, in winter as well as

summer, was on the open sea anywhere between Nantucket Shoals and Cape May. Early in his career George Steers became famous through his pilot-boats, and in 1849 he built one whose fame survives to the present day. The *Mary Taylor*, named after a popular actress and singer, was a remarkable boat in that her design was directly opposed to all established theories and traditions of naval architecture. Up to the building of *Una*, George Steers had followed the general form then found in all vessels, — the "cod's head and mackerel's tail" model, with round water-lines forward and a generally full forebody, finished out by a long, clean after-body; the form being well described by its popular designation just quoted. In the *Mary Taylor* this form was practically reversed: the midship section was moved aft, the bow was made longer and much finer, and the after-body was filled out. The result of this change was nothing less than a revolution in designing, quickly imitated by other builders and ultimately affecting all classes of vessels.

It is one of the most interesting facts in the whole history of American yachting that within the two years or less which elapsed between his work in modelling *Una* and his production of the

Mary Taylor, George Steers, in defiance of firmly established precedent, turned his models end for end, making the bow approximately of the form previously considered suitable for the run, and *vice versa*. That some very powerful influence lay back of this change is apparent, but history is silent as to its nature. The most plausible supposition is that it came indirectly from a movement for a reform in designing instituted some years previously in England by John Scott Russell, the Scotch scientist and naval engineer.

Hudson River Sloop.

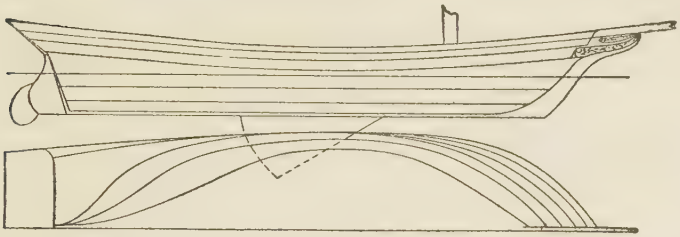
Though John C. Stevens figures most prominently in yachting history, his brothers, Edwin A. and Robert L., were closely associated with him in yachting, as in many lines of work and study; the three were thoroughly conversant with the progress of art and science in the Old World and in communication with some of the leading engineers and inventors of the time. For some years previous to this John Scott Russell had

publicly advocated his new theory of the wave-line, advocating a long, fine bow with a marked hollow at the fore-end, and a much fuller curve for the water-lines of the run. Though he failed in awakening any widespread interest on the part of ship and yacht builders, some few were induced to consider the subject in a new light, and in 1848 the iron cutter *Mosquito* was built on the Thames, one of her marked features being the long, hollow bow which all old salts predicted would take her speedily to the bottom in a sea-way. It is highly probable that the Stevens brothers were informed as to Scott Russell's theories, and that through their influence George Steers was first led to take up a new line of experiment.

The *Mary Taylor* proved a great success, her superiority being demonstrated in her work outside the Hook alongside of the old type of pilot-boat. In 1850 the "cod's head" bow of *Maria* was cut away and she was rebuilt forward, being lengthened to 110 feet on the water-line and 116 feet on deck. It is impossible to gauge the exact success of this change, as racing was conducted in a very informal manner, with inadequate allowances, and most of her opponents

were much smaller than she; but it seems probable that her speed in smooth water was decidedly improved.

Between 1849 and the time of his death in 1856, through a runaway accident in driving from his home on Great Neck, Long Island, to New York, George Steers, working in an unpreten-



Typical Hudson River Packet Sloop.

tious way, sometimes as the modeller of a yacht or a pilot-boat and often as the head of a shipyard, directing personally the construction of vessels after his models, did much to improve the actual vessels and to advance the knowledge of naval architecture. He designed the pilot-boat *Moses H. Grinnell* and others equally famous in their day, the yachts *Silvie* and *Ray*, the latter still in commission as a cruising yawl; he altered existing yachts and improved their speed, and he designed and built the fast sloop *Julia*, famous

for many years. His larger work included the United States frigate *Niagara* and some fast merchant vessels. His name is linked permanently with that of the schooner yacht *America*, but she represents only a small part of the important work crowded into a brief career.

In spite of their close association at this period, there is little to connect George Steers with the sloop *Maria*, one of the notable yachts of her time. She was built after *Gimcrack*, in 1845, and her model is commonly ascribed to Robert L. Stevens. At this time the passenger and freight traffic of the Hudson River was carried on in a type of vessel distinct from the pilot-boats of the Lower Bay, the "North River sloop," of 75 to 100 feet in length, very wide and of shoal draft, with a large centre-board, and rigged with a large and lofty mainsail and a single big jib. In spite of their bluff bows these unwieldy craft sailed fast in strong breezes and on a reach, and sometimes outsailed the yachts of the lower river. At times one of them was chartered for a cruise, and tradition states that such was the case on the first cruise of the New York Yacht Club, in 1844, one of these chartered sloops with a party of yachtsmen on board outsailing the yachts.

It was shortly after this cruise that the Stevens brothers planned a new yacht on the lines of one of these sloops, she being finally named *Maria*, after the wife of John C. Stevens. She was built at William Capes's shipyard, in Hoboken, and apparently was not a success at the outset, as she was not raced until the end of her second season. Her dimensions were: length on water-line, 92 feet; breadth, 26 feet 6 inches; depth, 8 feet 3 inches; draft extreme, 5 feet 2 inches. She was essentially a centre-board sloop, of very light draft, the fore end of the keel being rockered up to a depth of but 8 inches at the fore-foot.

Maria.

There was a large centre-board about amidships, of iron, and counterbalanced by powerful spiral springs; the hoisting gear consisted of a shaft running along the top of the centre-board trunk and carrying two barrels, the larger one

aft, for the lifting chains; so that as the shaft was revolved the after end of the board dropped more rapidly than the fore end. The weight of the board, including some lead ballast, was 7 tons. The mast was hollow, bored out like a pump log; while the boom, also hollow, was built of long staves, hooped together like a barrel and trussed within with iron rods. The cloths of both mainsail and jib ran parallel to the foot of each sail, so that the seams would offer no resistance to the wind. In the course of her many alterations the yacht had a large portion of her lead ballast placed outside the hull, not as a keel, but in a layer from five to two inches thick over the garboards and lower planking. She was also fitted with a second centre-board, a small one in the after dead-wood, to help the steering when off the wind.

Her great size, and her type, which was specially fitted for local conditions, made *Maria* a very successful yacht. In those days the races were started off Hoboken and the course was down the Hudson River and New York Bay, rounding the Southwest Spit; or sometimes going outside Sandy Hook and rounding the lightship. With the prevailing summer winds this

made a reach out and back, and the great length of *Maria*, with her shoal draft and big rig of only mainsail and jib, gave her an advantage over the smaller yachts of deep model and rigged for cruising.

CHAPTER III

THE BIRTH OF THE NEW YORK YACHT CLUB

Spray, N.Y.Y.C.
Hamilton Wilkes, Esq.

In the infancy of yachting there was little need for a yacht club in either Boston or New York, but early in the forties yachts of 25 to 50 tons were sufficiently numerous about New York to make racing possible. What was probably the first aquatic club in this country was the Knickerbocker Boat Club of New York, organized in 1811, but dying in the following year. In 1830 the New York Boat Club was organized, with a

membership of one hundred, including John C. and Robert L. Stevens, Ogden Hoffman, Samuel Verplanck, C. L. Livingston, and Robert Emmett. In 1835 some of the Boston merchants who were sailing in company on fishing trips and short cruises organized the Boston Yacht Club, but it had little more than a nominal existence, dying in a couple of years. In 1840 the Hoboken Model Yacht Club was organized; little is known of its history, but it was not a club for sailing model yachts, as its name now implies, but an association of owners of sailing boats.

It is no way surprising that when the number of yachts was such as to justify the union of yachtsmen the first steps were taken by John C. Stevens. His new schooner *Gimcrack* had been afloat barely a month when there was held on board her a meeting that marks one of the important dates in yachting history. The story of the meeting is best told in the following copy of the minutes: —

Minutes of the New York Yacht Club

On Board of the *Gimcrack*, off the Battery,
New York Harbor, July 30, 1844, 5.30 P.M.

According to previous notice, the following gentlemen assembled for the purpose of organizing a yacht

club, viz. John C. Stevens, Hamilton Wilkes, William Edgar, John C. Jay, George L. Schuyler, Louis A. Depaw (Depau?), George B. Rollins, James M. Waterbury, James Rogers, and on motion it was resolved to form a yacht club. On motion it was resolved that the title of the club be the New York Yacht Club. On motion it was resolved that the gentlemen present be the original members of the club. On motion it was resolved that John C. Stevens be the Commodore of the club. On motion it was resolved that a committee of five be appointed by the Commodore to report rules and regulations for the government of the club. The following gentlemen were appointed, viz. John C. Stevens, George L. Schuyler, John C. Jay, Hamilton Wilkes, and Captain Rogers. On motion it was resolved that the club make a cruise to Newport, Rhode Island, under command of the Commodore.

The following yachts were represented at this meeting, viz. *Gimcrack*, John C. Stevens; *Spray*, Hamilton Wilkes; *Cygnet*, William Edgar; *La Coquille*, John C. Jay; *Dream*, George L. Schuyler; *Mist*, Louis A. Depaw; *Minna*, George B. Rollins; *Adda*, Captain Rogers. After appointing Friday, August 2, at 9 A.M., the time for sailing on the cruise, the meeting adjourned.

JOHN C. JAY, *Recording Secretary.*

The cruise was duly made, and at Newport were met the schooner yacht *Northern Light*, owned by Colonel W. P. Winchester of Boston, and the Boston pilot-boat *Belle*, then under charter to Captain R. B. Forbes. These two

gentlemen, with Mr. David Sears, were the first eastern yachtsmen to join the New York Yacht Club.

On March 17, 1845, the first regular meeting of the club was held at Windhorst's coffee-house, on Park Row, the following officers being elected: Commodore, John C. Stevens; Vice-commodore, Hamilton Wilkes; Recording Secretary, John C. Jay; Corresponding Secretary, George B. Rollins; Treasurer, William Edgar. Just north of the rocky promontory, Castle Point, the home of the new commodore, lay the low flat shores of Weehawken, at that time a picnic ground for New Yorkers, under the name of the Elysian Fields. Here was built, as a home for the club, a modest and unpretentious wooden house, first occupied on July 15, 1845. Two days later the first regatta of the club was sailed, the course being from a line off Robbins Reef past a mark-boat off Bay Ridge on the Brooklyn shore, then past another mark-boat off Stapleton on the Staten Island shore, thence out through the Narrows and around the Southwest Spit buoy, returning over the same course. The following yachts started: —

Cygnet	schooner	45 tons	William Edgar
Sibyl	schooner	42 tons	C. B. Miller
Spray	schooner	37 tons	Hamilton Wilkes
La Coquillle . .	schooner	27 tons	John C. Jay
Minna	schooner	30 tons	J. Waterbury
Gimcrack . . .	schooner	25 tons	Com. Stevens
Newburgh . . .	sloop	33 tons	H. Robinson
Adda	sloop	17 tons	J. Rogers
Lancet	sloop	20 tons	George B. Rollins

There is no record as to which of this fleet were keel and which centre-board boats, but the keels were probably in the majority. All were stanch, sturdy little ships, both wide and fairly deep, with broad sterns and very short overhangs forward and aft; they were all snugly rigged, with short stump bowsprits carrying single jibs, and short masts and gaffs. Where a topmast was carried it was an insignificant bit of stick, and light sails were simple and few in number. The yachts were rated at their custom-house measurement, the allowance being 45 seconds per ton per mile. The race was practically a sweepstakes, the entrance fees going to a cup for the winner, all racing in one class, with no distinction as to rig. The winner was *Cygnet*, her time being 5:23:15; the second boat was

Sibyl, in 5 : 25 : 25 ; and the third was *Gimcrack*, in 5 : 30 : 30.

What is officially recorded as the first annual regatta of the club took place on July 16–18 of the following year. The course was changed to bring the start and finish off the club-house instead of off Robbins Reef, some six miles below; but the outer mark was still the Southwest Spit buoy, this being retained as the regular club course for many years. The prizes for each day were cups costing $200 each; the two rigs were classed together, with the same allowance as in the previous year, and there was a time limit of eight hours. The schooners entered were *Gimcrack*, *La Coquille*, *Sibyl*, *Cygnet*, *Brenda*, *Lancet*, *Northern Light*, *Spray*, *Pet*, *Siren*, *Coquette*, and *Minna;* the sloops were *Newburgh* and *Mist*. The last, of 44 tons, was the only one to complete the course within eight hours, her time being 7 : 37 : 00.

On the following day a second race was sailed under the same conditions, the starters being the schooners *Gimcrack*, *Hornet*, *Minna*, *Siren*, *Coquette*, and *Cygnet;* the sloops *Mist*, *Pearsall*, *Ann Maria*, and *Dart*. The order at the finish was *Gimcrack*, *Mist*, *Hornet*, *Dart; Hornet*, of

25 tons, owned by Mr. A. Barker, winning on allowance. The three sloops *Pearsall*, *Ann Maria*, and *Dart* were apparently not yachts, but working boats admitted to the race.

What would now be called the "fall regatta" of the club, sailed on October 6, 1846, was a most interesting race, the first "Corinthian" or amateur race sailed in America, and the official record is worth a place here, especially as *Maria* began her racing career.

FIRST AMATEUR (CORINTHIAN) REGATTA
OF THE
NEW YORK YACHT CLUB
October 6th, 1846

For a cup subscribed for by members of the New York Yacht Club.

None but members to sail and handle their yachts.

The allowance of time on this occasion was reduced to 45 seconds per ton, custom-house measurement.

The course was from a stake-boat (the *Gimcrack*) anchored off the club-house, Elysian Fields, thence to and around a stake-boat anchored off Fort Washington Point, thence to and around a stake-boat anchored in the Narrows, turning it from the east, and return to the place of starting, whole distance 40 miles.

Rig	Name	Owner	Tons	Start	Ft. Wash. Point	Narrows	Finish	Actual Time
Sloop	Maria	John C. Stevens	160	10.58.20	11.54.00	2.38.10	4.02.45	5.04.25
Sloop	Lancet	Geo. B. Rollins	20	10.00.00	10.54.00	——	4.36.09	6.36.09
Schooner	Siren	W. E. Miller	72	10.21.40	11.17.00	2.48.55	4.24.20	6.02.40
Schooner	Cygnet	D. L. Suydam	45	10.10.45	11.05.00	2.38.00	4.26.15	6.15.30
Schooner	Spray	Hamilton Wilkes	37	10.07.05	11.01.00	2.40.00	4.28.31	6.21.26
Schooner	La Coquille	John C. Jay	27	10.02.35	10.58.00	2.45.00	4.29.12	6.26.27

The tide at starting was at the last of the flood. Tide turning ebb at 12 M. Wind strong from southwest.

The *Maria* won, beating the *Siren* 58 minutes and 15 seconds on actual time.

Regatta Committee:

GEORGE L. SCHUYLER.
ANDREW FOSTER, JR.
WILLIAM E. LAIGHT.

The season of 1847 opened with a match race, on May 25, over the club course, for $500 a side between the schooners *Sibyl*, of 42 tons, Mr. C. Miller, and *Cygnet*, 45 tons, Mr. D. L. Suydam, the former winning. On May 31 a second match followed, over the same course and for the same stakes, between *Cygnet* and *Cornelia*, of 90 tons, built the previous year for Mr. William Edgar. *Cornelia* took the ground off Ellis Island shortly after the start and was out of the race. The annual regatta was sailed on June 2, the yachts being divided into three classes, but not on the basis of rig. The first class, of large yachts, included the schooners *Cornelia* and *Siren* and the sloop *Maria;* the second class included the new sloop *Una* with five of the older schooners and sloops; and the third class was open to vessels, apparently not necessarily yachts, not enrolled in the club. The winners were *Maria*, *Una*, and *Dart.*

The Corinthian race was repeated in the fall, the record being: —

SECOND AMATEUR (CORINTHIAN) REGATTA
OF THE
NEW YORK YACHT CLUB
October 12th, 1847
(Over the New York Yacht Club Course)

For a prize subscribed to and presented by the non-yacht-owners of the Club. The yachts to be manned and sailed exclusively by members, allowing each yacht a pilot.

EDWARD CENTER,
LEWIS M. RUTHERFURD,
N. P. HOSACK,
Regatta Committee.

ENTRIES

RIG	NAME	OWNER	TONNAGE	START	STATEN ISLAND STAKE-BOAT	LONG ISLAND STAKE-BOAT	S.W. SPRIT	HOME STAKE-BOAT
Schooner	Gimcrack	J. C. Stevens	25	10.00.00	12.19.23	——	——	——
Schooner	Dream	Geo. L. Schuyler	28	10.02.00	——	——	——	——
Schooner	Spray	Hamilton Wilkes	37	10.04.00	12.04.55	12.12.10	——	4.28.28
Schooner	Cygnet	John R. Suydam	45	10.06.00	12.06.35	12.13.52	——	——
Sloop	Una	J. M. Waterbury	59	10.08.00	11.40.11	11.47.00	1.28.43	3.43.40
Schooner	Siren	W. E. Miller	72	10.10.00	12.07.02	12.14.22	2.02.05	4.23.00
Schooner	Cornelia	William Edgar	94	10.12.00	12.21.11	——	——	——

The *Dream*, *Gimcrack*, *Cygnet*, and *Cornelia* did not finish the race. The *Cygnet* ran aground on Staten Island and injured the keel.

Wind fresh from the west.

Sloop *Una* won the prize, a silver cup.

The fleet now included a number of yachts, those modelled wholly or in part or built by

George Steers being *Gimcrack*, *La Coquille*, of 44 feet 6 inches length, *Cornelia*, of 74 feet length, and the sloop *Una*, a centre-board boat 65 feet on the water-line, 17 feet 8 inches breadth, 6 feet 3 inches depth, and 6 feet 5 inches draft; her tonnage being 46 tons.

The schooners *Coquette* and *Brenda*, both keel boats, were modelled and built by Windé & Clinkard, the former being 66 feet long and of 76 tons, the latter 48 feet long. Small as she was, she has a notable record; in 1849 she cruised to Bermuda and there sailed a match with the British yacht *Pearl*, winning by fifty-five seconds, this being the first Anglo-American international match. The schooner *Spray*, 37 tons, and 49 feet 8 inches over all, was built by Brown & Bell, ship-builders, of New York. There appears in the club records about this time the schooner *Hornet*, and a little later the schooner *Sport*, both of about 25 tons. The two are one and the same vessel, her origin being said to date back to 1819, when she was built in Baltimore under the name of *Hornet*, being rebuilt by George Steers in 1847 and again in 1850, when she was renamed *Sport*. She survived for many years after this, being used on the eastern coast, but her final fate is uncertain.

The measurement of the yachts of this day, the custom-house tonnage, was very irregular and unreliable, the yachts being entered at different figures for no apparent reason. Alterations were frequent, very radical changes being made in comparatively new boats by owners who evidently were not satisfied with their craft.

The term of office of Commodore Stevens lasted until 1854, in which year William Edgar was elected in his place, holding the office until 1859, when he gave way to Edwin A. Stevens, who continued until 1866. On February 16, 1865, the club was incorporated "for the purpose of encouraging yacht building and naval architecture and the cultivation of naval science." The old Hoboken club-house was abandoned in 1868, the club establishing itself on the wooded bluff at Clifton, Staten Island, overlooking the Narrows, the old house being used for many years by a younger club, the New Jersey Yacht Club; at the present time it is again in the possession of the New York Yacht Club.

The first city quarters of the club were established in 1871 in the house of the Jockey Club, on the corner of Madison Avenue and 27th Street. After the death of Commodore Garner, in 1876,

the club station, then on the dock at Stapleton, Staten Island, was abandoned; and for many years the club had no waterside station. In 1884 it moved into the building at 67 Madison Avenue, where it was comfortably housed until it outgrew the limited quarters as a consequence of the great increase of membership resulting from the America Cup matches of 1885, 1886, and 1887. In 1901 it moved into the magnificent house specially built by it on West 44th Street,—the finest building of the kind in the world. After the abandonment of a permanent waterside station the club established landing-places for the convenience of its members off the principal New York anchorage grounds, at Staten Island, Bay Ridge, and on the East River. At the present time it maintains a very perfect system of club stations at all the important ports between New York and Vineyard Haven, each with a house giving temporary shelter to members, with telephone connection, etc., and a landing-stage.

For twenty years the New York Yacht Club was the one organized representative of American yachting. The Southern Yacht Club, of New Orleans, was organized as early as 1849, but its influence has always been local; the North Carolina

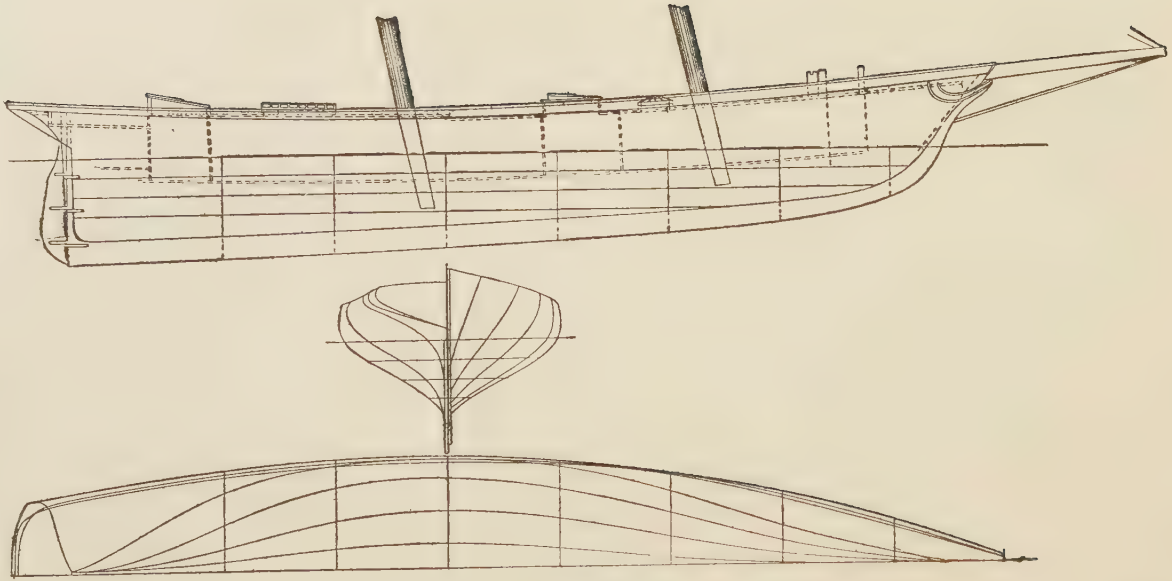
Yacht Club was organized in 1854, but it, too, was necessarily a local club. In 1857 the Brooklyn Yacht Club was organized, followed in 1858 by the Jersey City Yacht Club; but it was not until the close of the War of the Rebellion that clubs became numerous, between 1866 and 1872 many clubs being formed along the Atlantic seaboard.

CHAPTER IV

THE BUILDING OF THE *AMERICA*

Through the work thus outlined on the part of John C. and Edwin A. Stevens and their associates in the club, and of George Steers, American yachting was established upon solid foundations of fair sporting usage and technical progress; regattas and private matches were common among the larger yachts, and modellers and builders were encouraged to work for the improvement of the craft. The public interest awakened by the racing of such yachts as *Maria*, *Cornelia*, and *Una* found expression in the general racing of small open boats in New York waters.

The yachts differed widely in model, many being keel boats of the general type of the pilot-boats and fishing-boats, while others followed the shoal freighting smacks of the day; but all were of the "cod's head and mackerel's tail" model. The evolution of a distinctive yacht type progressed but slowly, the keel holding its own for a



America.

Showing details of interior arrangement. These lines are said to have been taken off by night when the yacht was first owned in England. They are corroborated by lines taken later by the U. S. Navy, and by other reliable data, and presumably represent very correctly the original form of the yacht.

time, though local conditions, as exemplified in the shoal waters of the anchorage ground and of parts of New York Harbor where short cuts were possible to yachts of light draft, with the reaching course down the river and back, all tended toward the one dominant type that prevailed from 1860 to 1880.

The first experiment with the comparatively fine bow of *Gimcrack*, followed by the success of the *Mary Taylor*, the *Hagstaff*, the *Grinnell* and other Steers pilot-boats, wrought a great change in the principles of modelling, and about 1850 yachtsmen began to lengthen the bows of their craft. In that year *Maria* was taken in hand, and her over-all length was increased from 92 to 110 feet, giving her a hollow bow in place of the old bluff one.

The project for a great world's fair, the first of the kind, to be held in London in the following year, was well known in America, and invitations had been received by the representatives of various industries to take part in what was planned to be an exposition of the world's progress in arts and manufactures. The reputation of the New York pilot-boats, familiar to every seaman on British steamers and packets, had

extended to England; and in the fall of 1850 the suggestion was made by a British merchant to some of his New York correspondents that one of these boats should be sent to England to take part in the races planned as an auxiliary feature of the exhibition. This letter was laid before Commodore Stevens and Mr. George L. Schuyler, who immediately fell in with the idea. Arrangements were made for the building of a representative craft, to be modelled by George Steers and built under his supervision. At this time, just after the dissolution of the firm of Hathorne & Steers, Mr. Steers was employed in the yard of William H. Brown, at the foot of East 12th Street, New York, and the contract for the construction of the proposed vessel was made with Mr. Brown.

It is a curious fact that in those days, when yachting was mainly supported by the individual efforts of a few men, even a yacht club being still an experiment, there should have been formed a "syndicate," such as is now common in the defence of the America Cup. The members of this first yachting syndicate were Commodore John C. Stevens, Edwin A. Stevens, George L. Schuyler, Colonel James A. Hamilton,

J. Beekman Finley, and Hamilton Wilkes. The yacht was to be named *America*, the author of this suggestion being unknown, though it evidently appealed to all as a suitable name.

Instead of following the model of *Maria* or *Una*, it was decided to build virtually a pilot-boat, of about 140 tons, a keel craft in every way fitted for the ocean voyage. The contract was a peculiar one, and distinctly to the advantage of the "syndicate"; the price of the yacht completely equipped for sea and furnished was to be $30,000; when ready for sea she was to be tried by an "umpire," Mr. Hamilton Wilkes, for a period of twenty days at the expense of the syndicate; and if she should not prove faster than any other vessel in the United States, the syndicate should be under no obligation to accept or pay for her. It was further provided that if the preliminary trial should prove satisfactory the syndicate might take her to Europe, race her there, and, if not successful, return her to the builder, merely paying the expenses of the trip. A special stipulation was made to the effect that the yacht should be ready for trial by April 1, 1851.

It is perhaps unnecessary to say that the yacht was not ready by the appointed date, nor

even by May 1, to which time the agreement was extended; she was not launched until May 3, and on May 24, Mr. Schuyler, who had charge of the negotiations, made a flat offer to purchase her outright for the sum of $20,000 in cash, provided that she were delivered, "finished as per contract, equipped and ready for sea," on or before the second day of June. Even this late condition was not complied with, and only on June 18 was the yacht delivered to her owners. Prior to this, however, the new yacht had been tested in a series of informal trials against *Maria*, on New York Bay, and she had met some of the other yachts of the club. That *Maria* won very easily was but natural; she was a larger yacht, presumably in good racing form and known to her skipper and crew, and in type and rig she was specially adapted to the course. The new yacht was of a different type and rig, designed for sea-going; she was but partially completed, and there had been no time for tuning up. In her trials with other yachts of the day *America* proved more successful, and her owners were evidently in no way discouraged by the showing against *Maria*, as they vigorously pushed the preparations for the projected voyage.

It would be unfair to class George Steers as a "rule-o'-thumb" builder according to the meaning of the term in recent years, as the majority of those so designated were men who, with a very limited knowledge of naval architecture, were wedded to some one special model or fad, after which all their vessels, regardless of size or use, were fashioned. He, on the other hand, was ever busy with experiments and open to the reception of new ideas, his work showing a regular progress toward better things. At the same time, his methods were those of the "rule-o'-thumb" builder as distinguished from those of the modern yacht designer. While he was skilled in ordinary ship drafting and mould-loft practice, the basis of his work was the half-model cut in miniature from the solid block of pine. From this model the measurements of the keel, stem, counter, and sections were taken by him, and the lines were laid down full size on the floor of the mould loft, the moulds for the timbers being made from these lines. It was his custom, we are told, not merely to alter the lines as they were laid down by himself or under his personal direction, filling out in one place or fining the form in another; but after

the vessel was in frame he did not hesitate to make further alterations if the desirability suggested itself.

It is very difficult to make sense of the cryptic saying attributed to him, "that for a vessel to sail easily, steadily, and rapidly, the displacement of water must be nearly uniform along the lines." As a matter of fact the displacement and consequent replacement are not uniform, but first increase and then decrease in rapidly varying ratios; but we know that he placed a high value upon the "diagonals," or more properly the "dividing lines," as shown by the temporary "ribbands" used to hold the frames in place, and by the general run of the plank edges, in this respect being in accord with the practice of the designers of to-day. It would appear that special fads and fancies as to a particular form of midship section, bow lines, or run were subordinated in his mind to the idea of producing an easy and gradual flow of water at the bow, passing partly under and partly around the middle body with an increasing speed, and gradually losing its momentum as it came up from below to fill the hollow made by the middle body. The wide variety of his work and the excellence of many

individual vessels prove that he sought to work from the broad principles of naval architecture, rather than from narrow localisms and personal fads.

It is probable that each vessel was the result of careful thought and deliberation; but the present system, by which a design is worked out on paper to the most minute detail of form, construction, sparring, rigging, and fitting, with specifications from which any builder may execute the work, was unknown at that time. As a consequence, most of the data relating to the design of *America* were a matter of personal knowledge on the part of her designer, never being committed to paper. There is no reliable building model of her extant, nor are there any working drawings. Many copies of her lines, of more or less doubtful authenticity, have been published, most of them presenting glaring discrepancies. The design here given is said to have been taken secretly by the draftsmen of a yard at which the yacht was docked for a short time, in England, the work being done without the knowledge of the then owner, who, when approached afterward on the subject of having such a record of the actual form of the yacht, refused to consider such

an idea; consequently the fact of the lines having already been taken was kept as a secret of the yard for many years. These lines in their original form give evidence of the handiwork of skilled draftsmen, and they agree substantially with the most reliable plans and information derived from various other sources. The dimensions given according to modern methods are as follows: —

	Feet	Inches
Length, over all	101	9
Length, load water-line	90	3
Overhang, forward	5	6
Overhang, aft	6	—
Breadth, extreme	23	—
Breadth, load water-line	22	6
Freeboard, bow	7	6
Freeboard, least	3	9
Freeboard, taffrail	5	6
Draft, extreme	11	—

The freeboard as given is to the deck, above this was a bulwark and rail fourteen inches high; the greatest breadth was about halfway between the deck and the water, the bows having a fine bold flare, while the topsides tumbled in a little amidships and considerably more on the counter.

The fore overhang was short in itself and included very little false work in the way of clipper stem or figurehead; the counter was very short, as in the pilot-boats of a much later date. The depth or keel outside the rabbet was 2 feet 4 inches, all of wood, the ballast being iron stowed inside.

The hull was built of the woods in common use about New York, oak, hackmatack, locust, cedar, yellow and white pine. The planking was of white oak, 3 inches thick. The deck is described as of *yellow pine*, $2\frac{1}{2}$ inches thick; but this is probably an error, white pine being then in universal use for all small vessels. Clamps and deck beams were of yellow pine, the rails of white oak, 6 by 3 inches, and the coamings and deck fittings of mahogany. The bottom was coppered to a point 6 inches above the water-line, and the topsides were painted in lead color, probably merely one of the priming coats; after arriving at Havre they were repainted black. On the stern was a large figure of an eagle, gilded, with two white banners in his talons and wreaths of green flowers or leaves; this trophy ultimately found a permanent resting-place as the signboard of the Eagle Hotel, at Ryde, Isle of Wight.

The arrangement below was patterned after the pilot-boats. There was an oval cockpit, shown in the plans referred to as of 10 feet in fore-and-aft length and extending into the counter, the rudder post coming up through it; from this a companion led to the steerage, with a bath-room to starboard and a clothes-room to port; the sail locker being in the lazarette, beneath the cockpit. The main saloon extended to the mainmast, being 18 feet in length and of the full width of the ship; it was fitted with lockers and six berths. The headroom aft was about 6 feet 6 inches, but there was a break in the deck just forward of the mainmast, reducing the headroom to 6 feet in the middle and forward part of the vessel. Forward of the main saloon were four staterooms, each nearly eight feet square, and forward of them were the galley and pantry. The fore companion was placed nearly amidships, between the masts, and over the galley, the forecastle extending well abaft the foremast. Here there were berths for fifteen. There was a circular skylight over the forecastle, just abaft the foremast, and a large, square skylight over the saloon.

The mainmast was 81 feet long, the foremast 79 feet 6 inches, and the bowsprit 32 feet. The

masts had an excessive rake, $2\frac{7}{8}$ inches to the foot. The main boom was 58 feet long, the main gaff 26 feet, and the fore gaff 24 feet, there being no boom on the foresail; there was a light main-topmast, but no foretopmast, and a large single jib. The sails were made by R. H. Wilson, of New York, the total area being 5263 square feet in mainsail, foresail, and jib. With the racing gear, they were stowed in the hold on leaving New York, some old sails of the *Mary Taylor* being used for the ocean passage.

At 8 A.M. on June 21, 1851, the yacht left her builder's yard and was taken in tow by a steamer, which left her outside Sandy Hook at 11 A.M. There were thirteen persons on board, Captain "Dick" Brown, the skipper (a Sandy Hook pilot and one of the owners of the *Mary Taylor*), Nelson Comstock, the mate, a crew of six before the mast, and a cook and a steward. As passengers went George Steers, his brother, James R. Steers, and the latter's young son, Henry Steers, then fifteen years old, who afterward made a name for himself as a successful ship-builder and business man.

The yacht was bound for Havre, and she reached there in good season, the voyage taking

but twenty-one days. Commodore Stevens, with his brother Edwin and Colonel Hamilton, the father-in-law of Mr. Schuyler, had preceded them by steamer, spending a couple of weeks in Paris and joining the yacht on her arrival. Three weeks were spent at Havre in refitting the vessel, bending the racing sails, painting, and making ready for racing; then, on July 31, she weighed anchor and stood across the English Channel to the Solent.

CHAPTER V

THE WINNING OF THE SQUADRON CUP

THERE was no wind on the morning of August 1, when the *America's* party was first astir, but a breeze about 9 o'clock brought a visitor in the shape of the cutter *Laverock*, then a new boat, of about 70 tons, which came out from Cowes to try the mettle of the invader, whose coming had already been heralded among British yachtsmen. The spirit of the *America's* owners is clearly shown by the fact that while it was manifestly to their advantage to conceal the true speed of their yacht, and there was nothing unsportsmanlike in such a course, they preferred to accept this first empty challenge, though handicapped by the stores carried across the ocean, the schooner being some inches below her designed water-line and the breeze being light. Without a word on either side, it was a race from the time the Yankee weighed anchor, after waiting until it was evident that she would not be allowed to start without giving a test of her speed.

At the time when the "New Deed of Gift" was the subject of some bitter criticism on both sides of the Atlantic, in 1887–1888, the term "practical yachtsmen" was introduced into the controversy by some of the Boston defenders of the "New Deed," being applied to yachtsmen who, though sailing literally within the rules, measured well the chances of success before starting in a race, and waived no advantages, however unfair, which increased their chances of winning. It is evident that Commodore Stevens and his associates were made of different stuff; in this case they had nothing to gain and everything to lose by disclosing the true quality of their yacht to the inquisitive *Laverock*, and they would have violated no ethics of sport in employing the little tricks of sailing to such an end that they should be outsailed.

Thirty years later, when the little Scotch cutter *Madge* was sent out from Glasgow to New York on a similar voyage of conquest, her management was intrusted by her owner to James Duncan, an exceptionally discreet and skilful Scotch skipper. After fitting her out at New York he sailed her about the Bay day after day, having pleasant little brushes with different fast

The America Cup.

Originally the Royal Yacht Squadron Cup of 1851, offered for an open race of yachts of all classes around the Isle of Wight.

sloops, all of which easily beat the visitor, to the vast amusement of American yachtsmen. It was not until several matches were made and the first

America as Originally Rigged.

one actually sailed that the owners of the sloops awoke to the fact that the wily Duncan had made fools of them as well as of the newspapers, by killing the speed of his boat in the informal trials.

A similar course on the part of Commodore Stevens would have enabled the party to clinch some matches with the British yachts, the object of their long voyage; but such a course was never thought of, and this first rather impertinent and pointless challenge was accepted in earnest.

At the dinner given in their honor after the return to New York, Commodore Stevens described the incident in words well worth quoting: "During the first five minutes not a sound was heard save, perhaps, the beating of our anxious hearts or the slight ripple of the water upon her swordlike stem. The captain (Dick Brown) was crouched down upon the floor of the cockpit, his seemingly unconscious hand upon the tiller, with his stern, unaltering gaze upon the vessel ahead. The men were motionless as statues, their eager eyes fastened upon the *Laverock* with a fixedness and intensity that seemed almost supernatural. The pencil of an artist might, perhaps, convey the expression, but no words can describe it. It could not and did not last long. We worked quickly and surely to windward of her wake; the crisis was past, and some dozen of deep-drawn sighs proved that the agony was over."

Brief as it was, this race measured the wonder-

ful windward powers of the visitor and made it impossible for her to make any matches with the British yachts. Every courtesy and the warmest hospitality were showered upon the party, the yacht was praised by the English papers, and the members of the Royal Yacht Squadron and all other yacht owners were condemned for the lack of spirit which led them to decline a friendly contest with the single daring visitor.

A challenge to sail the *America* against any fleet of schooners was passed unnoticed, and a second and more specific challenge to race any yacht, without receiving the usual allowance for rig from cutters, for any stake from a simple cup up to 10,000 guineas, met the same fate. The one notable exception was Robert Stephenson, the great engineer, who made a match to sail his schooner *Titania*, of 100 tons, against the *America* for £100, the course to be twenty miles out and back from the Nab Light.

It is a curious coincidence that barely a week after the *America* was launched in New York the Royal Yacht Squadron had decided to offer a cup costing 100 guineas as a prize for a race around the Isle of Wight, to be open to yachts of all nations. The date of this race had been set

for August 22, and when, after a couple of weeks, it became evident that no matches could be made with the representative yachts of the Squadron, the *America* party, though anxious to return home, determined to start in this race if the wind were not too light.

The day came, and it was Friday too, with a light westerly breeze, the course being from off Cowes to the eastward, passing inside the Noman and Sandhead buoys, and, according to the printed programme, *outside* the Nab light-ship, moored some three miles east of the Isle of Wight. After the finish a protest was made against the *America* by Mr. George Ackers, owner of the big schooner *Brilliant*, on the ground that she had not passed outside the Nab light-ship, which was a fact; but the protest was dismissed by the committee, as it was proved that the instructions given to Commodore Stevens made no mention of this mark. Twenty years later, in the second match for the recapture of the Cup, a somewhat similar protest was made by the challenger, Mr. Ashbury.

The fleet that met the Yankee schooner on August 22, 1851, was a representative one, not of the best of the British racing yachts of the day, but of the yachts then owned by the most promi-

nent yachtsmen and regularly raced in the Queen's Cup and other important events of each yachting season. The list of starters was as follows: —

Yacht	Rig	Tonnage	Owner
Beatrice . . .	Schooner	161	Sir W. P. Carew
Volante . . .	Cutter	48	J. L. Cragie
Arrow	Cutter	84	T. Chamberlayne
Wyvern . . .	Schooner	205	Duke of Marlborough
Ione	Schooner	75	A. Hill
Constance . . .	Schooner	218	Marquis of Conyngham
Titania . . .	Schooner	100	Robert Stephenson
Gipsy Queen . .	Schooner	160	Sir H. B. Hoghton
Alarm	Cutter	193	Joseph Weld
Mona	Cutter	82	Lord Alfred Paget
Brilliant . . .	Schooner, 3 masts	392	George Ackers
Bacchante . .	Cutter	80	B. H. Jones
Freak	Cutter	60	W. Curling
Stella	Cutter	65	R. Frankland
Eclipse	Cutter	50	H. S. Fearon
Fernande . . .	Schooner	127	Major Martin
Aurora	Cutter	47	T. Le Merchant
America . . .	Schooner	170	J. C. Stevens, *et als.*

This fleet included all gradations of size and quality, mostly in inverse proportions; the largest vessel, *Brilliant*, was a huge old cruising craft, rigged with three masts, square topsails on fore and main, a promising entry for a race largely to windward in a light breeze. On the other hand *Volante*, then a new yacht, and *Aurora*, about a

dozen years old, were smart little racing cutters, embodying the best practice of the day. *Arrow*, then thirty years old, and *Alarm*, some eight years younger, were noted as among the largest racing cutters. *Titania*, then a new yacht, was comparatively fine forward, being built to test the wave line theory of Mr. John Scott Russell; but she was then an experiment and by no means a successful one owing to faulty rig and other details. Practically all the others were of the "cod's head and mackerel's tail" model, with very full bows. *Mosquito*, the opening wedge in England, as the *Mary Taylor* and *America* were in this country, was not entered; nor had she then, though four years old, made any marked reputation.

All of these vessels were alike in one particular: their sails were made from hand-woven canvas, of flax, very loose in texture, and, according to the universal theory of the day, cut with excessive bag or fulness. The sails of the *America* were of cotton, woven by machine into a hard, even fabric, and cut to sit as flat as possible; though few in number and small in area, they were most effective drivers off the wind; however, owing to the excessive rake of the masts, the weight of the

booms caused them to swing inboard, and it was necessary to boom them out in any light breeze.

The original rig included only the single big jib, but shortly before the race it was decided to add a flying jib-boom and flying jib or jib topsail. George Steers went to Michael Ratsey, the yacht modeller and builder, of East Cowes, for the jib-boom, and by way of payment made a bet with Ratsey that the *America* would beat any schooner named by the latter, who picked *Beatrice*. Steers then went to a sailmaker, probably one of the Ratsey family also, and bought a jib topsail on the same terms, to be paid for only in the event of the *America* losing the race. It is perhaps as well that they were not called on to pay for either, as they seem to have done little good. The yacht had been on the wind but a short time when about a quarter of the course was covered before a fresh puff of wind carried away the new jib-boom; to the intense satisfaction of "Dick" Brown, expressed in the remark that he was "d—d glad that it was gone," as he did not believe in carrying a flying jib to windward — a piece of wisdom that would have saved many a good topmast in later days if generally recognized by skippers.

The yachts were moored in a double line, mak-

ing sail at the first signal, 9.55, and casting off moorings at the starting signal, 10 A.M. *Fernande* was not present, and *Titania* and *Stella* did not start, leaving fifteen yachts in all. *Gipsy Queen* was first away, followed by *Beatrice*, then *Volante*, *Constance*, and *Arrow*. *America* started slowly, her crew taking their time at first, but when under way, though carrying no running sails, with only her three lower sails, a small main gaff topsail, and the flying jib, she soon moved toward the head of the fleet. Yachts, steamers, and other vessels in great numbers followed the race through the morning, for at least half the way around the island.

At the Noman Buoy, about $7\frac{1}{2}$ miles from the start, the order was: *Volante*, *Freak*, *Aurora*, *Gipsy Queen*, *America*, *Beatrice*, *Alarm*, *Arrow*, and *Bacchante*, there being but two minutes between the *America* and the leader. The wind was very variable, S.S.W. in general direction, as the yachts passed to the south of the island, freshening and then dying away. When off Ventnor on the southern shore, near the point where *Britannia* and *Vigilant* fought out a historic luffing-match forty-three years later, the *America* led her nearest rival, *Aurora*, by a mile; and the fleet

had been reduced in number. *Wyvern* had turned back near the Noman Buoy, *Volante* had sprung her bowsprit and withdrawn, *Arrow* was ashore, and *Alarm* gave up and went to her assistance. Though the wind fell light near the Needles (the extreme west point of the island) and a light haze covered the sea, the *America* held her long lead of the fleet, *Aurora* being now half a dozen miles astern. The royal yacht *Victoria and Albert*, with her Majesty Queen Victoria on board, came out to meet the yachts, and was saluted by the leader. The wind continued light through the early evening, as under a cloudy sky the Yankee yacht made her way slowly up the Solent to the finish line, where she was timed at 8 : 34, the band playing "Yankee Doodle." On the way up the Solent *Aurora* had gained, finishing at 8 : 58; by Ackers' Scale, the time allowance then in use, she would have been beaten something less than two minutes corrected time had the race been sailed with allowance. *Bacchante* was timed at 9 : 30, *Eclipse* at 9 : 45, and *Brilliant* at 1 : 20 on Saturday morning; the records give no time for the other six.

On the following day the queen visited the yacht, which had anchored by request off Osborne House, coming on board in her barge with

the prince consort and her suite. On being shown over the vessel, even to the forecastle, she expressed a great interest in everything. On August 25 the race for the Queen's Cup of the year took place, but the *America* did not start, the reason assigned being that the breeze was below six knots' strength, though it is certain that she had everything to gain and nothing to lose, whatever the weather. As the wind soon freshened, however, she started in chase after the others had been gone for an hour and a half, finally finishing ahead of the leaders, — though, of course, not timed. On August 28 the match with *Titania* was sailed, in a strong breeze, the course being twenty miles to windward and return, from the Nab light-ship. The fore gaff of the *America* was carried away on the wind and some time lost in repairs, but she won by fifty-two minutes. Shortly after this the yacht was sold for £5000 to Lord John de Blaquière, an officer in the Indian army, and with the Cup in their possession Commodore Stevens and his associates took a steamer for New York.

In historic importance this race for the Royal Yacht Squadron Cup far surpasses all other events of yachting; its influence on the sport at

large, on the progress of design, construction, and sail-making in the two nations, on their future social and political relations, can hardly be estimated. The whole history of yachting down to 1848–1849, the dates of the building of *Mosquito* in England and *Mary Taylor* in New York, may be considered as merely a formative period; and this race for the Cup marked the beginning of real yacht racing; or perhaps more correctly, the systematic racing of yachts built for that purpose as well as for cruising.

The race was for a cup paid for by the Royal Yacht Squadron and given for all time, with no qualifications, to the first yacht which finished, regardless of size, rig, or restrictions. Though commonly called the "Queen's Cup," even by experienced yachtsmen and yachting writers, it was not; and as we have just seen, the *America* never raced for a queen's cup, merely sailing over the course with the yachts which were officially timed.

The Royal Yacht Squadron Cup, since, by general usage, known as the "America Cup," thus became the joint property of six gentlemen, all members of the New York Yacht Club. As it could not be divided, it was by common con-

sent assigned to the possession of Commodore John C. Stevens, the moving spirit of the venture.

The fifteen yachts which raced for the Cup were all entered on an absolutely equal basis; each represented individual ownership, and not a yacht club; each sailed only to win the Cup from fourteen competitors; and had one British yacht won, the Cup would have been the private property of her owner for all time.

On its technical merits the race was a mere drifting match, decided largely by chance. Had the *America* been defeated, it would have been in no way to her discredit; and though yachting history would have been vastly different, the fact would still have remained that her superiority over all British yachts had been freely conceded before the race.

In its technical results the race was all-important; it clinched for all time and beyond all possible cavil the superiority of the *America's* model and sails, and it resulted in the immediate alteration of many of the leading British yachts of the day. For the future, it wrought a complete and permanent change in all theories of design in England and America, and in other countries, such as Sweden, as well.

CHAPTER VI

THE PROGRESS OF DESIGN IN AMERICA AND ENGLAND

The subsequent history of the *America* is one of the most interesting in all yachting, but to do justice to it would require a volume of its own, and only the leading points can be mentioned here. The first work of the new owner was to reduce the spars by five feet and to add iron braces inside, a useless proceeding which naturally impaired her speed. Manned by an English crew, she was raced through the remainder of 1851 and the following year. Early in 1852 she cruised to the Mediterranean, meeting a heavy gale of four days' duration between Malta and Gibraltar, which she rode out easily. The owners of other British yachts still had no desire to meet her in matches, but she sailed in the Queen's Cup race on July 22, being beaten by a couple of minutes by the cutters *Mosquito* and *Alarm*. On October 12 she won a private match with the Swedish schooner *Sverige*, of

280 tons, as compared with her measurement of 208 tons by the British rules. She was then sold to Lord Templeton, who used her through 1853 and then laid her up at Cowes, where she lay neglected until 1859, when she was taken to Pitcher's yard, on the Thames, for repairs. She proved to be in very bad condition, and she was ultimately bought at a low price by the owner of the yard, who set about to rebuild her on speculation. She was practically taken apart, piece by piece, each being replaced; the new frames being of oak and elm, and the planking of teak and oak. In this work the builder was wise enough to attempt no improvements of his own, but to respect the work of George Steers.

In 1860 she was purchased by H. E. Decie, an English yachtsman, who renamed her *Camilla*, and made a cruise to the West Indies, later on racing her a little in British waters. There is a gap in this part of her history, but in 1861 she crossed the ocean again to Savannah, Georgia. Just at the outbreak of the war she was transferred to a Southern owner, and with one or two guns mounted on deck she began a new career as a despatch-boat and blockade-runner under the name of *Memphis;* at the present time she has

a handsome bell of silver bronze on the heel of her bowsprit with the inscription, "*Memphis*, 1861."

In April, 1861, she was discovered, her masts and part of her port side above water, in the St. Johns River, Florida, by the United States gunboat *Ottawa*, Commander Thomas H. Stevens, having been scuttled by auger holes in her bottom. She was raised by plugging the holes and pumping her out, and after being completely refitted, her sails and gear being entirely new, she did duty through 1862–1863 with the blockading fleet off Charleston, several important captures being credited to her. From 1864 she was attached to the Naval Academy at Annapolis, as a tender and a practice vessel for the cadets. Here she may be left for the time until she reappears in the course of yachting history.

The first effect of the visit of the *America* was visible in 1851 in the remodelling of the entire British yacht fleet; the old apple bows were cut off and new fore-bodies were added, with long, clean, knifelike bows, sometimes carried to excess. As in the case of the foolish copying of *Gloriana* just forty years later, the average owner and builder jumped to the conclusion that the whole

merit of the *America* lay in her fine bow, and very few attempted to fathom the full measure of the designer's skill as shown in the vessel as a whole. In thus lengthening the bow the run was often completely sacrificed; masts were placed and raked in servile imitation of the *America*, without regard to the balance of hull and sail, and the spar and sail makers were kept busy with new rigs for old yachts, the sails being cut as flat as possible.

The revolution, for it was nothing less, was marked by both good and bad features. There was much foolish and unreasonable imitation, but the hard lesson of the *America* served to arouse yachtsmen to the teachings of such men as John Scott Russell, previously ignored, and to lead to more thorough study of naval architecture and yacht designing. The result was visible a few years later in the production of a superior class of yacht, far faster than the old, and also improved in other ways. The heavy and clumsy rigs derived from the navy disappeared; the cutter rig became more common, sharing the favor of yachtsmen with the ordinary two-masted fore-and-aft schooner rig; and material advances were made both in construction and ballasting.

Though so fruitful of results in England, the victory of the *America* had no effect whatever on the progress of yacht design in her native country. Up to 1850 the keel yacht was quite as popular as the centre-board in the larger classes, and though the latter had numerous representatives in the small-boat fleet of New York, the keel type was in general use about Boston. The superior speed of the light displacement, lightly built centre-board yacht over the keel boats of the pilot-boat type in the races which were each year becoming more popular, and the convenience of very light draft in mooring off the flats of Hoboken, Communipaw, and Gowanus, appealed strongly to both owners and builders; and while some large keel yachts were built for offshore work, the number of centre-board boats fit only for New York Bay and the Sound increased very rapidly.

When in 1852 George Steers built the sloop *Silvie* for Mr. Louis A. Depau, he adopted the centre-board type; the sloop *Julia*, built by him in 1854, was also a centre-board boat, as was the sloop *Rebecca*, built in 1855 by William Tooker, a brother-in-law of Steers.

It was about this time that the modelling and

building of yachts began to assume distinct importance as trades or professions and such names as Fish, Mallory, Loper, and Albertson first became known. "Captain Bob" Fish made for himself a peculiar place in history; he was a man of no technical education, but a born boat sailor, an original thinker, and a very clever mechanic. Though he established himself in connection with his brother Isaac as a boat and yacht builder as early as 1845, he is best known as a modeller and yacht sailing-master. During the fifties he had a boat shop at Pamrapo, on the New Jersey shore, where a large force of men for the time was kept busy in the building of small racing cat-boats.

The New York Cat-boat.

These boats had been in use for many years about New York, for summer sailing and racing, and one of their principal haunts was the west shore of New York Bay, from Communipaw to Constable's Hook, at the entrance of the Kill von Kull. "Bob" Fish was noted as the builder of

some of the fastest, as well as for his exceptional skill in sailing. It was through a visit to his shop at Pamrapo in 1852 that the Marquis of Conyngham became the owner of a 16-foot boat which he shipped to England, naming her *Una*. She created as great a furor in her way as the *America*, giving the generic name "Una" to the class of which she was the prototype. At a comparatively recent date she was still in existence on the estate of Lord de Ros, in Ireland. It was probably through her that the type and the Fish boats became known in France and Germany, where they flourished in great numbers, until of late years superseded by the modern small rater. In Germany they are still known as "Bubfish" boats, in recognition of the designer and builder of the first imported.

One of Captain Fish's first large yachts was the sloop *Newburg*, 1845; then came the *Undine* and *Gertrude*, 1852, *Victoria*, 1856. Later on he abandoned building as a regular business and found profitable employment as a racing skipper, principally in the employ of Mr. William P. Douglas and the Lorillard brothers. For these keen yachtsmen he modelled, built, altered, and sailed yachts.

The Weehawken flats may properly claim the honor of being the cradle of American yachting, but next to them come the flats about Gowanus Bay, spanned by the famous "Penny Bridge" over Gowanus Creek, and the expanse of flats on the opposite shore of New York Bay, already mentioned. These latter began at Communipaw, just where the narrow mouth of the Hudson River widens into the Upper Bay, and they ran down nearly five miles to the protecting arm of Constable's Hook. Their outer limit — the main channel of the Upper Bay as marked by Robbins Reef and Bedloe's, now Liberty, Island — was from one and one-half to two miles from the shore, which was then farm land with scattered villages: Communipaw, where the Jersey City Yacht Club established itself in 1858, Greenville, Pamrapo, and Bayonne. The depth of water over this area varied from one to five feet at mean low tide, and in those days the shores were practically in a state of nature. To-day the whole of Constable's Hook is covered by the smoky chimneys of the Standard Oil Company and its allied corporations. "Black Tom," the island farther up, is a storage station for oil; long docks pierce the water, and the shores are covered with a net-

work of railroads and the big red storage tanks of the oil companies.

The farmers who dwelt along these shores in the fifties were amphibious by nature, many of them fishermen and oystermen. The big families of Ellsworths and Van Buskirks, names long noted in New York yachting, could within their own immediate circle man a big schooner with a crack racing crew of men who, through long experience with the drift nets, knew every tide and eddy from the Battery to Sandy Hook light-ship, and who, through many coasting voyages, knew the whole Atlantic beach from Norfolk to Newport. This entire community was devoted in one way or another to yachting. Here dwelt "Captain Joe" Ellsworth, the eldest of the family and the head of a prosperous business in planting, gathering, and importing oysters, himself a skipper of rare ability and with a wonderful fund of local knowledge gained by his experience from boyhood up in fishing and oystering. While his time was mainly given to his business, he was always ready and able to take charge of a yacht for a race. His brother, "Captain Phip" (Philip), engaged in the same business, was the modeller of the family,

possessing a marked skill in the carving of models, after the custom in those days, and producing many fast yachts.

The Ellsworths were located at Bayonne, a mile below "Bob" Fish's home, and close beside the latter was the shop of "Pat" McGiehan, a noted builder of open cat-boats and jib-and-mainsail boats, and of some yachts of larger size. Other builders of less note had their shops along this shore, and racing was the regular amusement of the community. Across the bay, at Gowanus, "Hen" Smedley built the special type of centre-board sloop or jib-and-mainsail boat known as the "Penny Bridge boat"; and here, as well as along the Staten Island shore and in sheltered nooks on the East and North rivers, were boat shops, waterside saloons frequented by boat sailors, and fleets of cat-boats, jib-and-mainsail boats, and small cabin yachts, all of the centre-board type. It was not until well along in the sixties that yacht clubs became general, but from the first a strong community of interest and friendly rivalry united all these localities.

In New York was J. B. Van Deusen, the builder of many large schooners. At Nyack

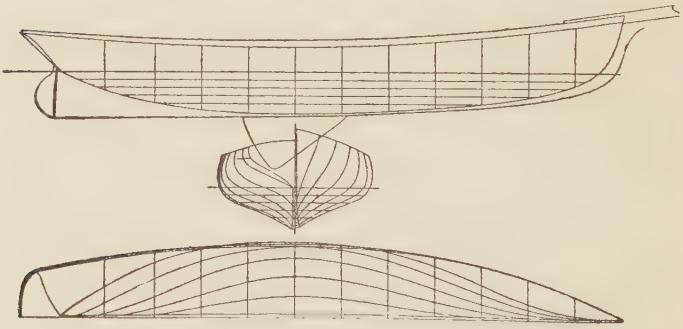
on the Hudson was J. E. Smith, a modeller and builder; at Philadelphia were the Albertson Brothers; at Mystic, Connecticut, was D. O. Richmond; at Noank near by were Robert Palmer and D. D. Mallory; at City Island was David Carll, his brother, Jesse Carll, being located across the Sound at Northport; while at Rye Neck was the yard of David Kirby.

The two most noted of the early builders about Boston were D. J. Lawlor and George Lawley. Early in the sixties John B. Herreshoff, the eldest of the family, though totally blind, started a boat shop at Bristol, Rhode Island, building small and then larger yachts, and finally launches and steamers, as the business grew to the present Herreshoff Manufacturing Company, of which he is now president.

There were some men of broad methods of thought and inquiring mind among these, such as D. J. Lawlor, but, as a class, they were wedded to their special fads and fancies and to some one type of yacht. While special conditions and exceptional environment sometimes produced a keel boat, the tendency for nearly thirty years was to disregard the *America* and the wholesome ideas of her designer, and to force in the larger

sizes of yacht the extreme development of the small centre-board type, until the end was reached in the fatal capsize of the mammoth schooner *Mohawk* in 1876 and the ignominious defeat of the crack centre-board sloops by the cutter *Madge* in 1881.

The centre-board type possesses so many advantages for American waters that there was



Julia, Centre-board Sloop.
Modelled and built by George Steers, 1854 (now schooner *Nirvana*).

every possible reason for its development within reasonable limitations. The early centre-board yachts built shortly after the *America* were excellent in type and proportions; it would be hard to find a more perfect model in its way than that of *Julia*, of moderate breadth, good depth of body, with fair and easy lines and particularly well-

balanced ends, — a combination of speed and other good qualities, and, with proper ballast and sail, a safe boat. In the course of time, however, we find yachts of 100 feet water-line drawing no more than *Julia* of 72 feet water-line, and withal over-sparred, inadequately ballasted, and possessed of radical defects of form that made them unfit for all waters other than Long Island Sound and New York Bay, and unsafe even there at all times. Only two years ago one of these yachts, originally the *Haswell*, built in 1858, though modernized and considered perfectly safe, capsized in a squall on the Sound and drowned her owner, his two daughters, and her skipper.

Throughout the fifties the regattas, special races, and private matches of the New York Yacht Club kept the sport alive; in 1857 the Brooklyn Yacht Club came into existence as the natural result of the close association of a number of Brooklyn yachtsmen who anchored their yachts in Gowanus Bay; in the following year the Jersey City Yacht Club was formed in the same way across the bay; in 1867 the Columbia Yacht Club was formed about the foot of Christopher Street, on the Hudson River; and in 1868 the South Boston Yacht Club was organized.

Following the example of the *America*, the sloop *Silvie*, owned by Mr. Louis A. Depau, crossed the Atlantic, the first centre-board sloop to make the passage. She sailed in some races, but was not very successful. On August 3, 1855, the New York Yacht Club sailed its first race off Glen Cove, Long Island, at the opening of the annual cruise, the starters including five schooners and fourteen sloops. The first race of the club at New Bedford, also on the occasion of the cruise, was sailed in the following year, and in June, 1858, the first race around Long Island was sailed. The start was off the club-house at Weehawken, thence through the Narrows to sea, around Montauk Point and through the Sound, finishing at Fort Schuyler. The contestants were: —

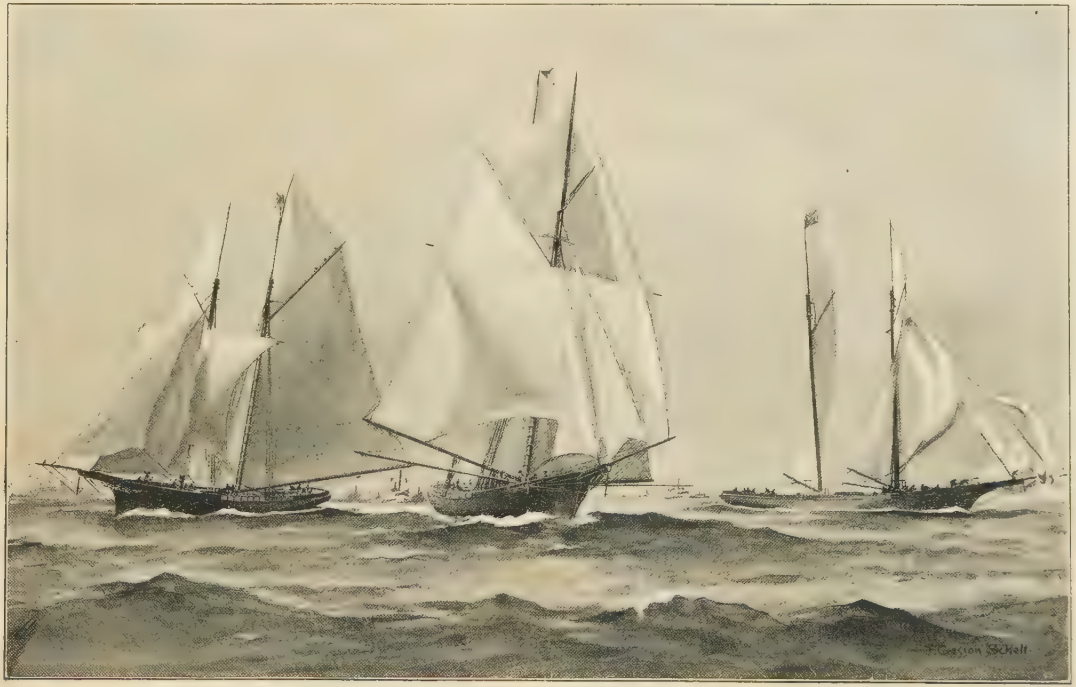
Yacht	Owner	Tons
Schooners:		
Haze	W. W. McVicker	87.23
Silvie	W. A. Stebbins	105.04
Favorite	A. C. Kingsland	138.00
Widgeon	William Edgar	101.09
Sloops:		
Rebecca	James Gordon Bennett, Jr.	77.06
Madgie	R. F. Loper	99.05
Una	W. Butler Duncan	67.05
Minnie	S. W. Thomas	59.14

Rebecca was disqualified on protest for passing through Plum Gut; the schooner prize went to *Silvie*, and the sloop prize to *Minnie*. *Silvie*, by the way, on her return voyage from England in 1855 was dismasted and later was converted to a schooner.

In the following year, when on the cruise, Mr. Bennett matched *Rebecca* for $500 a side against the schooner *Restless*, the course being from off Brenton's Reef Light, outside Newport, to Throgg's Neck at the head of Long Island Sound, a distance of nearly 160 miles; with a strong southwest wind the schooner, being the larger by 18 tons, won by twelve minutes. A second match was sailed two days later between the schooners *Favorite* and *Haze*, off New London, and on reaching Newport the whole fleet sailed in a special race from off Fort Adams around a mark-boat 16 miles outside the Brenton's Reef Light. In addition to the usual fall regatta in September, a match was sailed on October 6 between the schooners *Favorite*, *Gypsy*, and *Zinga*, the course being on the Sound, from off Hart's Island, around the Eaton's Neck buoy. In 1860, on August 2, the sloops *Julia* and *Rebecca* sailed a match for $250 a side, the course being

20 miles to windward and return from the Sandy Hook light-ship, the first over this course. By special agreement the two housed their topmasts and sailed under mainsail and jib only, *Julia* winning by thirteen minutes.

Up to this time the racing of large yachts was practically limited to the New York Yacht Club, nearly all the large yachts of the country being owned in New York and enrolled in the club. The sport, however, was growing in popular favor; yachts of all sizes were in general use about Boston; and the use of small cruising yachts as well as the popular cat-boat was increasing all along the northern portion of the Atlantic seaboard.



Henrietta *Vesta* *Fleetwing*

The Start of the Ocean Race.

Sandy Hook, December 11, 1866.

CHAPTER VII

THE DAY OF THE GREAT SCHOONERS

On the outbreak of the War of the Rebellion the course of yachting was interrupted, the New York Yacht Club abandoned its annual regatta for the year (1861), and though its fleet continued the regular racing in the following and succeeding years, the young sport felt the influence of the war. When peace came at last in 1865 it opened a new era of national life in which money was more plentiful and sport of all kinds more popular than in the early days of the republic. The foundations of many large fortunes had been laid during the war, and the reaction from its suspense and depression led men to seek new pleasures. Yachting came in for its share of the general prosperity, and while all classes felt the influence of the change, it was most evident in the largest.

The first year of peace, 1865, was marked by the launch of some imposing schooners, *Fleetwing*, 206 tons, and *Fleur de Lis*, 92 tons, both

keel, modelled by J. B. Van Deusen, with the centre-board *Phantom*, 140 tons, by the same modeller; *Palmer*, 194 tons, and *Josephine*, 143 tons, both centre-board, designed by R. F. Loper; *Idler*, 133 tons, centre-board, designed by Samuel Pook; *Eva*, 77 tons, modelled by Robert Fish; and *Juniata*, 82 tons, by Albertson Brothers, both centre-board boats. The following year witnessed the launching of *Vesta*, 201 tons, modelled and built by David Carll for Pierre Lorillard, Jr., a centre-board vessel; *L'Hirondelle*, 262 tons, keel, afterward the famous *Dauntless*, by Van Deusen; and *Halcyon*, 130 tons, centre-board, modelled and built by J. J. Harris at Port Jefferson.

Sappho.

In 1867 the big keel schooner *Sappho*, 310 tons, modelled and built by Poillon Brothers, was added to the fleet, and in 1868 was launched the centre-board schooner *Madeline*, 151 tons, mod-

elled and built by James E. Smith at Nyack. With the keel schooners *Henrietta*, 205 tons, built by Henry Steers, nephew of George, in 1861, and *Alarm*, 240 tons, by Van Deusen, 1864; *Maria*, 231 tons, now owned by E. A. Stevens and altered to a schooner in 1865; and *Silvie*, *Julia*, and other old sloops converted to the popular rig, the New York Yacht Club could boast of a fleet unequalled even in the home of yachting, the English Channel.

The owners of these new yachts were of a different class from the Stevens family and the original founders of the club, but they were equally good sportsmen, and they laid high stakes and sailed hard races. After some interesting regattas and private matches about New York in the regular yachting seasons of 1865–1866, they found that the Sound and the little corner of the Atlantic between Cape May and Montauk Point, rough as it is at times, was far too small for them.

There was some good racing in the latter year, but it failed to satisfy the owners of *Vesta* and *Fleetwing*, and just at the beginning of winter a match was made between them, the terms of which are best told by the exact words of the agreement: —

George and Franklin Osgood bet Pierre Lorillard, Jr., and others $30,000 that the *Fleetwing* can beat the *Vesta* to the Needles, on the coast of England, yachts to start from Sandy Hook on the second Tuesday in December, 1866, to sail according to the rules of the New York Yacht Club, waiving allowance of time. The sails to be carried are mainsail, foresail, jib, flying jib, jib-topsail, fore and main gaff topsails, storm staysail and trysail.

No sooner was this bold venture known than a third party, James Gordon Bennett, Jr., requested to be admitted to the match, and the following was added to the agreement: —

The yacht *Henrietta* enters the above race, by paying $30,000 subscription by members of the New York Yacht Club; any minor points not embraced in the above, that cannot be settled by Messrs. Osgood, Lorillard, and Bennett, shall be decided as follows: Each shall choose an umpire; the umpires chosen in case of a disagreement to choose two others. Twenty per cent of the money to be deposited with Mr. Leonard W. Jerome, on the 3d of November, the balance to be deposited on the first Tuesday in December — play or pay.

Signed by

J. G. Bennett, Jr.
Franklin Osgood.
George A. Osgood.
Pierre Lorillard, Jr.

December 5, 1866.

In the matter of detail it was agreed that the yachts should be started, blow high or blow low, on Thursday, December 11, at 1 P.M., by H. S. Fearing, one of the owners of the schooner *Rambler;* and the finish time was to be taken on each yacht, when, on the true Channel course, the light on the west end of the Isle of Wight bore abeam. None of the yachts was to carry a Channel pilot from this side; each was allowed to carry a squaresail in addition to those already enumerated; everything but ballast might be shifted, and the forty-eight-hour rule was waived, allowing each to alter her ballast and trim up to the time of starting.

On a cool, clear winter morning, with a fresh westerly wind, the three got under way from Staten Island, accompanied by the club steamer and a fleet of steamers, yachts, tugs, and pilot-boats, and stood down through the Narrows. They were started promptly at 1 o'clock, the fleet accompanying them for some miles on their way. About 8 o'clock that night they were separated, only meeting again after the finish. The winter voyage was an exciting one on each yacht, but only one disaster attended it; on December 19, at 9 P.M., in a rising gale, with a

heavy sea running, *Fleetwing* was boarded by a sea over the quarter, and the watch on deck, eight men, were washed out of the cockpit, six of them being lost. The yacht broached to, losing her jib-boom, and she lay hove to for five hours before resuming her course.

On Christmas Eve, at 6:55 P.M., the Scilly Lights were sighted by *Vesta*, and just fifty minutes later they were picked up by *Henrietta*. Sailing the whole course without a tack, the latter was but eleven miles out from the straight line from start to finish; she passed the Lizard at 3 A.M. on Christmas morning, picked up a Cowes pilot at noon, and at 3:45 P.M. the two judges on board timed her as she passed the Needles; a few hours later and she dropped her anchor in Cowes Roads, amid a welcome well worthy of her great achievement. *Vesta* was less fortunate, her landfall bringing her a few miles to leeward of *Henrietta* at the Scilly Islands; and when she finally picked up a pilot late on Christmas evening, he went astray in a light fog, so that she did not finish until forty minutes after midnight. *Fleetwing* made a better course up Channel, and finished at midnight. The brief record of the race is as follows:—

	Time			Distance
	Days	Hours	Minutes	Nautical Miles
Henrietta . . .	13	21	55	3106
Fleetwing . . .	14	6	10	3135
Vesta . . .	14	6	50	3144

Mr. Bennett sailed on board *Henrietta*, with two fellow-members of the New York Yacht Club as judges; on board *Fleetwing* two judges, one being Robert Center, and her builder, J. B. Van Deusen; on board *Vesta* were two judges. Each yacht carried four officers and a crew of twenty-two men.

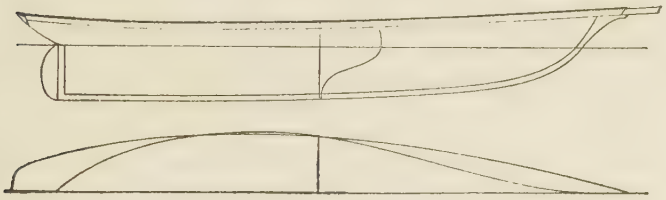
The pluck and spirit of American yachtsmen, in sailing such a race in winter for high stakes, and the quality of American yachts, were generously recognized in England, and every hospitality was tendered to the visitors. The return voyage was made in the following summer, the three sailing separately and with no attempt at racing.

There was now a demand for larger and larger schooners, and in 1867 Poillon Brothers, shipwrights, of Brooklyn, launched a very large schooner, modelled by themselves and built upon speculation. *Sappho*, as she was named, was a

keel yacht with very fine lines, her dimensions being, length over all, 134 feet; length on water-line, 120 feet; breadth, 24 feet 9 inches; depth of hold, 9 feet 6 inches; draft 12 feet 8 inches. Her tonnage was 274.40. She sailed several races and proved unsuccessful, nor did she find a purchaser; so in the following season she was sent to England, making the voyage from New York to Cowes in fourteen days. She entered a sweepstakes race around the Isle of Wight with the two big cutters *Condor* and *Oimara* and the schooners *Aline* and *Cambria*, and, though much the largest, was badly beaten. As there was no offer for her, she returned to New York, where she was finally purchased by that good yachtsman William P. Douglas, one of the patrons of Captain "Bob" Fish.

The yacht was placed in Captain Fish's hands for alteration. He docked her, stripped the planking from about the bilge, and "padded" the frames to the extent of about seven inches on each bilge, and then replaced the planking. The increase of breadth added greatly to the stability of the yacht, and it is probable that she was further improved by re-ballasting and other alterations. At any rate her new owner had suffi-

cient confidence in her and Captain Fish to start them both for Cowes, on racing bent. This time, with a strong breeze on the quarter, and smooth water all the way, she made a record run, 12 days, 9 hours, 36 minutes from Sandy Hook light-ship to Queenstown, 2875 miles;



Sappho.

After alteration by Captain Robert Fish.

her best day's run of 315 miles averaging 13.10 knots.

Mr. Douglas arranged a match with Mr. James Ashbury, the owner of the schooner *Cambria*, which had beaten *Sappho* so badly in the previous year, the stakes being a 50-guinea cup, three races to be sailed, of which two were to be sixty miles to windward and one a triangle of twenty miles to the side. Though *Sappho* was the larger vessel, no allowance for tonnage was asked by Mr. Ashbury, who evidently underrated her from previous experience. In the first race to wind-

ward, May 10, 1869, *Cambria* withdrew after forty miles were sailed, being hopelessly astern. In the second race, on May 14, the course was

Cambria.

The first Cup challenger, 1870.

laid by the judges from the Nab Light to Cherbourg Breakwater, sixty-six miles southwest; the wind being west-southwest, Mr. Ashbury refused to accept the course as a windward one. The

judges ordered the yachts to start in spite of this protest, and *Sappho* sailed over the course alone. The third race, on May 17, over the triangle, was a complete victory for *Sappho*, she being nearly two hours ahead at the second mark.

After disposing of *Henrietta*, Mr. Bennett purchased the schooner *L'Hirondelle* and renamed her *Dauntless*, and this same season he crossed to Cowes with her, making nearly as good a passage as *Sappho;* but he was by no means so successful in the racing. In the following year, 1870, he made a match with Mr. Ashbury for a £250 cup, from Gaunt Head, Ireland, to Sandy Hook Light. The start was made on July 4, and *Cambria* passed the Sandy Hook light-ship on July 27, at 3:30 P.M., just 1 hour and 17 minutes ahead of *Dauntless*. The main object of *Cambria's* visit was to challenge for the Royal Yacht Squadron Cup won by the *America* in 1851, — a matter important enough to demand a chapter of its own; for the present it is desirable to follow to its end the history of the schooner fleet as a whole.

The race for the cup was sailed on August 8, 1870, *Cambria* being defeated; but instead of ending the yachting season, as is now the case, this

race was but the beginning. The annual cruise followed, *Cambria* accompanying the fleet. There was a squadron race from New London to Newport, won by *Tidal Wave;* a race off Newport for two cups presented by Mr. Ashbury, for schooners and sloops, and a second schooner prize presented by members of the New York Yacht Club, *Magic* winning the Ashbury cup and *Cambria* the club cup as second prize. The next day *Cambria* and *Palmer* sailed a private match, the latter, handled for the time by "Dick" Brown, winning. A day later *Cambria* sailed another match with *Idler*, and won.

After continuing the cruise to New Bedford and Martha's Vineyard, the fleet returned to Newport and racing was resumed. On September 8 a race was sailed for a cup given by Commodore Bennett, since known as the Brenton's Reef Cup, *Palmer* winning it and *Cambria* taking the sweepstakes cup arranged as second prize; the other starters were *Sappho*, *Vesta*, *Idler*, *Tidal Wave*, *Madgie*, *Halcyon*, *Madeline*, and *Phantom*. On September 9 a match was sailed between *Phantom*, *Madeline*, and *Cambria* for a 50-guinea cup, the stranger being badly beaten and *Palmer* winning the cup. On September 11

an open race was sailed for a $500 cup given by the citizens of Newport, with a second prize; the first being won by *Phantom* and the second by *Palmer* out of a fleet of eleven, *Cambria* being fourth.

After the fleet returned to New York further races were in order. On September 28, a race was sailed for cups given by Vice Commodore Douglas, Mr. Ashbury, and Mr. Rutherford Stuyvesant, owner of *Palmer*, these being won by *Dauntless*, *Tidal Wave*, and *Madeline*. On October 13 a match was sailed between *Sappho* and *Cambria*, the former winning; and on the following day, in another match, *Dauntless* beat *Cambria*. The season ended with a match between *Sappho* and *Dauntless*, the former winning.

Not discouraged with his defeat, Mr. Ashbury challenged again, and in 1871 brought over a new schooner, *Livonia*, and was again defeated. Schooner racing was now one of the most popular sports of the day, interesting not only yachtsmen like Bennett, Douglas, and Stuyvesant, who sailed aboard their yachts, but many wealthy men who, caring little for yachting, envied the reputation of successful yachtsmen. The regattas of the New York Yacht Club and of the younger clubs now

coming into prominence brought out large fleets of fine schooners as well as many sloops. The schooner racing was the principal feature of the annual cruise. Valuable cups were given for special events, and private matches were sailed. The Brenton's Reef cups, the Cape May cup, and the New York Yacht Club Course cups for schooners and single-stickers, all given by James Gordon Bennett when he was commodore in 1871–1872, are memorials of this era, which is further marked by such names, in addition to those already mentioned, as *Wanderer*, *Dreadnought*, *Columbia*, *Tarolinta*, *Comet*, and *Resolute*.

The history of this period of rapid development and keen racing presents much of interest, but space permits only a brief review of its salient points. The keel type figured prominently through such big yachts as *Sappho*, *Dauntless*, *Dreadnought*, and *Resolute;* but the whole tendency of the time, in small and large classes alike, was toward the extreme development of the smooth-water skimming-dish, of great breadth and limited draft. The example of the *America* was ignored and the vicious type of which *Maria* was the first embodiment was carried to its last limit.

The *Tidal Wave*, one of the noted boats of

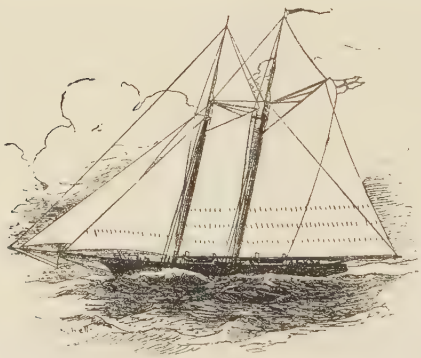
the day, was described more pointedly than politely as "the snake with a frog in its belly," her length on water-line being 100 feet, breadth 25 feet, coupled with a very long, sharp bow, and her draft but 8 feet 4 inches. The climax, both in dimensions and model, was reached in *Mohawk*, a centre-board schooner modelled and built by Van Deusen for William T. Garner, then commodore of the New York Yacht Club, in 1875.

Livonia.

The second challenger, 1871.

This yacht was 140 feet over all, 121 feet on the water-line, 30 feet 4 inches in breadth; and with a depth of hold of but 9 feet 4 inches, she drew only 6 feet with her big centre-board housed. Her sail area was in proportion to her exaggerated dimensions, the distance from the fore

end of the flying jib-boom to the end of the main boom being 235 feet, while the tip of her main-topsail-yard was 163 feet above the water. Her ballast was entirely inside the hull (lead blocks stowed on the frames) and she was most luxuriously fitted and furnished. Possessed of great initial stability through her extreme breadth and hard form, she was noted for carrying sail; but so little attention was paid at that time to the principles of naval architecture that very few realized that she was as liable to a sudden capsize as the ordinary sand-bag racing boat with ballast to windward.



Mohawk.

The end came on an afternoon in July, 1876, when the yacht lay at anchor off the club station at Stapleton, Staten Island, with all sails set and sheets made fast. Commodore and Mrs. Garner with several friends were on board, the captain was on deck, and the yacht was about to get

under way. Before her anchor was hove short a sudden gust of wind from over the high hills of the island struck her and heeled her down on her beam ends; before she could recover herself the ballast slid to leeward, while the heavy chairs and other cabin furniture followed, holding down Commodore Garner, Mrs. Garner, and two guests who were below at the time. The yacht then sank, carrying with her half a dozen persons. She was at once towed to the Jersey flats, off Bayonne, and cleared of water on the next ebb tide, the bodies being removed. Later on she was sold by the Garner estate to the United States government, and, after being converted to a keel boat and her rig reduced, she was devoted to the Coast Survey service, being still in existence under the name of *Eagre*.

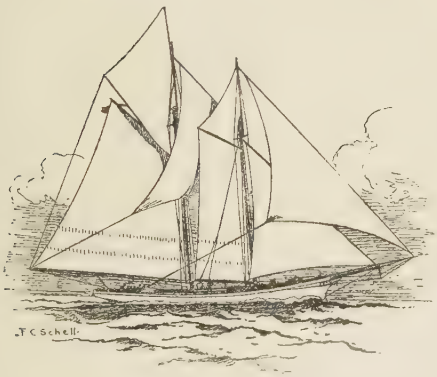
Many other causes were at this time operating against the continuance of the large schooner. Some of the keenest patrons of the class had lost part of their enthusiasm, the turf and polo claiming their attention, and the sloop rig was becoming more common in the medium size of cabin yacht.

The *Mohawk* disaster had a powerful effect in stopping the building of large schooners, and, though its true causes were not then understood,

it opened the way for a revival that was greatly needed. In spite of their keen interest in the sport, as shown by their liberal expenditures on yachts and prizes, their readiness to sail at any and all times, and their personal participation, the yacht owners of the day had but little interest in yacht design and naval architecture, all such matters being left to their sailing-masters and the professional modellers and builders. As might be expected, these two classes were in a deep rut, making no effort to escape therefrom. The owner and his friends swore by some one modeller or builder, and this same builder worshipped some particular model or form of section which had proved successful in a certain yacht. As a rule the models of the larger yachts were mere enlargements of successful sail-boats, with all the faults of the latter greatly magnified.

CHAPTER VIII

THE FIRST MATCHES FOR THE AMERICA CUP



Magic.

First Cup defender, 1870.

THE Royal Yacht Squadron Cup — which, by the way, is not a cup in shape, but a ewer, patterned after the peculiar style of art which characterized the early Victorian era — became the property of the original owners of the *America*, and after her sale and the winding up of the business of the syndicate it was, by common consent, committed to the custody of Commodore Stevens. Until the death of Mrs. Stevens, in 1855, it graced the drawing-room of their city home on Washington Square, New York; but with

increasing years Commodore Stevens began to think of some permanent disposition of the prized trophy. As a result, it was finally decided to dedicate it as a permanent challenge cup for international racing, and to commit it for the time being to the custody of the New York Yacht Club as a trustee, to which end the following letter was written: —

New York, July 8, 1857.

To the Secretary of the New York Yacht Club: —

Sir: — The undersigned, members of the New York Yacht Club, and late owners of the schooner yacht *America*, beg leave through you to present to the Club the Cup won by the *America* at the Regatta of the Royal Yacht Squadron at Cowes, England, August 22, 1851.

This cup was offered as a prize to be sailed for by Yachts of all nations without regard to difference of tonnage, going round the Isle of Wight, the usual course for the Annual Regatta of the Royal Yacht Squadron, and was won by the *America*, beating eight cutters and seven schooner Yachts which started in the race.

The Cup is offered to the New York Yacht Club, subject to the following conditions: —

Any organized Yacht Club of any foreign country shall always be entitled, through any one or more of its members, to claim the right of sailing a match for this

Cup with any yacht or other vessel of not less than 30 or more than 300 tons, measured by the Custom House rule of the country to which the vessel belongs.

The parties desiring to sail for the Cup may make any match with the Yacht Club in possession of the same that may be determined upon by mutual consent; but in case of disagreement as to terms, the match shall be sailed over the usual course for the Annual Regatta of the Yacht Club in possession of the Cup, and subject to the Rules and Sailing Regulations — the challenging party being bound to give six months' notice in writing, fixing the day on which they wish to start. This notice to embrace the length, Custom House measurement, rig, and name of the vessel.

It is to be distinctly understood that the Cup is to be the property of the Club, and not of the members thereof, or owners of the vessels winning it in a match; and that the condition of keeping it open to be sailed for by Yacht Clubs of all foreign countries, upon the terms above laid down, shall forever attach to it, thus making it a perpetual Challenge Cup for friendly competition between foreign countries.

J. C. Stevens.
Edwin A. Stevens.
Hamilton Wilkes.
J. Beekman Finley.
George L. Schuyler.

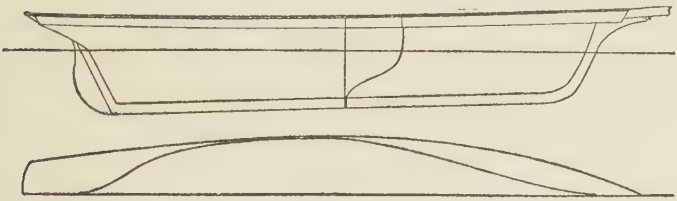
This plain, straightforward document, evidently framed by true sportsmen in a spirit of friendly sport, is the foundation of the most important

racing the world has ever known; at the same time there has arisen in connection with the trust prescribed by it strife of the bitterest kind, tending to thwart all the hopes of the original donors.

In the light of many subsequent events it is important to study several features of the "Deed of Gift," as it is commonly called. The first point is that the donors very evidently look upon a "mutual agreement," entered into on an equal basis by both parties, as in the case of any private match, as the basis for a challenge; the subsequent proviso only being resorted to after such attempt at agreement had failed. The word "match" is not clearly defined, but may be assumed either to be merely synonymous with "race," as applying to a single contest; or, by broad sporting usage, to a series of several separate races. In the event of a disagreement, not otherwise, certain particulars must be given; of these the "length" is not specifically described, but it is important to note that at that time, 1857, the measurement of the load water-line in racing trim, as now universally used, was unknown. The water-line did not appear on the model, it was not used by the modeller or builder. The current

meaning of the term "length" was a measurement taken "between perpendiculars," or "on keel for tonnage," as the phrase ran.

The first challenger for the Cup was Mr. James Ashbury, a wealthy English yachtsman, then owner of the schooner *Cambria*, who opened

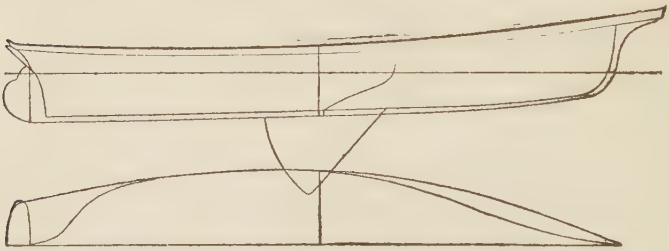


Cambria.

negotiations for a match on terms to be "determined by mutual consent" in a letter dated in October, 1868, in which he suggested the selection of a representative American schooner to visit England and race there in the summer of 1869, afterward racing *Cambria* across the Atlantic; the two afterward to sail three races around Long Island for the possession of the Cup. Nothing came of this proposal, which was followed next year by a second letter with much resulting correspondence, the end being that the club practically declined to enter into any mutual agreement, but offered to give Mr. Ashbury one

race against the fleet of the New York Yacht Club, over the club course.

Though protesting against such an interpretation of the deed of gift, he accepted; *Cambria* raced across the Atlantic against *Dauntless*, as already recounted, and on August 8, 1870, she was one of twenty-four schooners and sloops ranged at anchor inside the Narrows of New York Harbor. This fleet was even more mixed

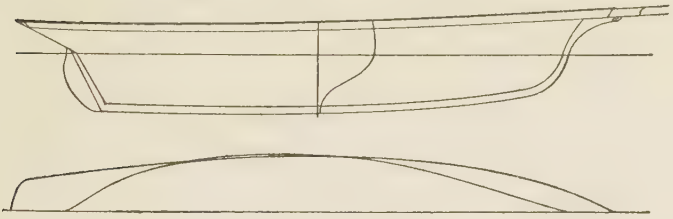


Magic.

than that which faced the *America* at Cowes in 1851, including all types from the big keels, *Fleetwing* and *Dauntless*, to the smaller centre-board boats, *Magic* and *Silvie*. Among them was the old *America*, specially refitted for this race by the Navy Department and manned by naval officers and seamen. The race finished with *Magic* eleven minutes ahead of *Idler*, *America* fourth, and *Cambria* tenth. It was a mere procession,

devoid of sporting interest or technical significance.

After the racing of *Cambria* on the cruise and in private matches already described, Mr. Ashbury returned home and began negotiations for another match next year, for which he proposed to build a new schooner. In the course of a correspondence lasting through the winter, he



Livonia.

combated the position of the New York Yacht Club, in point of fact, that it would make no mutual agreement but would compel a challenger to accept the minimum rights guaranteed by the deed of gift, finally winning three important points: that the match should consist of a series of races instead of a single contest; that some of these should be sailed on fair neutral courses as far as possible; and that he should be compelled to meet but one yacht in each race. In order to

minimize the advantage of this last point, however, the defending club insisted on selecting four yachts, representing the light and heavy weather types, one of which it would name on the morning of the race, according to the weather. As *Livonia*, though specially built for the contest, was of the sturdy sea-going British type fitted for the Atlantic voyage without a steam convoy, this reservation robbed the contest of all sporting interest, nor under the circumstances could it be considered a test of type.

The four yachts named to defend the Cup were *Sappho* and *Dauntless*, keel, and *Columbia* and *Palmer*, centre-board; the latter two noted as fast yachts in light weather. The first race, over the club course in light weather, was won by *Columbia* by nearly half an hour; the second race, twenty miles to windward from the Sandy Hook light-ship and return, was sailed in a strong and freshening breeze, *Columbia* winning by nearly eight minutes corrected time. *Livonia* protested her for turning the outer mark in the wrong direction, but the protest was disallowed. *Columbia* was named for the next day, but she had suffered in the blow of the day before and finally broke her steering-gear, and after other mishaps

was beaten fifteen minutes. It sounds strange at this day to hear excuses made for *Columbia* and

Columbia.

her crew, both used up after three races, when *Livonia* and her party were expected to sail the entire series. *Sappho* was chosen for the fourth,

which proved the best race of the series, twenty miles to windward and return, in a breeze that caused her to stow her topsails, she winning by half an hour. *Sappho* was again chosen for the next race, which proved to be the last, winning by nearly half an hour.

The result of this match was a bitter controversy between Mr. Ashbury and the New York Yacht Club, in which neither side showed to advantage. In behalf of the challenger it may be said that in neither match was he given ordinary fair play. Much was said about the terms of the first race being identical with those under which the *America* won the Cup; but they were not. In the first place, the *America* sailed on perfectly even terms with her competitors, each racing for the possession of a prize. In the case of *Cambria* and the fleet, while she was racing for the possession of a prize, the other seventeen were racing, not to possess the prize, but to keep her from winning it. As to the actual circumstances of the race, while the *America* was soon able to work clear of her competitors in the open water near the Nab, *Cambria* was, by bad luck, the leeward boat, buffeted and blanketed by the whole fleet in the narrow channels of the Lower Bay and the

Narrows. One yacht actually fouled her by failing to give way while on the port tack, but no protest was made.

The only results of these two matches were to arouse international ill-feeling and to confirm American builders in their faith in the extreme centre-board type. The failure of Mr. Ashbury in two attempts awakened no general interest in England, and the Cup was left without further challenge. While the majority of American yachtsmen indorsed the action of the New York Yacht Club, first in matching a single yacht by a fleet, and then in picking a defender according to the weather, the long discussion which ensued served a good purpose in preparing the way for that mutual agreement on fair and equal terms which was first accorded to Lord Dunraven in 1893.

The third challenge came from a new quarter, the yacht being the schooner *Countess of Dufferin*, modelled and built by Alexander Cuthbert, of Cobourg, Ontario, on Lake Ontario. She was owned by a syndicate of members of the Royal Canadian Yacht Club of Toronto, headed by Major Charles Gifford, Vice-Commodore of the club. Cuthbert was one of the "rule-o'-thumb"

builders, — a very clever man in his way, and well known on the Lakes from his local yachts. He followed the popular American type of shoal centre-board, the belief being quite general in certain quarters that he had merely copied a New York yacht in use on Lake Ontario. This, however, is unjust to Cuthbert, whose ideas, though in no way above those of his contemporaries, were at least his own.

The first negotiations between challenger and defender resulted in an agreement to sail a series of two out of three races, one only over the club course, the challenger to be met by but one yacht at a time. Major Gifford, with the fate of Mr. Ashbury in mind, pushed the matter further, and finally by a vote of eleven to five the defending club decided to name one yacht in advance for the match. This of itself was a great step toward equalizing the conditions, as the challenger, thousands of miles from home, was compelled to rely on one hull, one rig, and a single crew, while the defender in the past could substitute a new yacht for a disabled one or a fresh crew for a tired one.

The yacht selected was the schooner *Madeline*, owned by John S. Dickerson, originally built as

a sloop by David Kirby, in 1868, but, as then generally the case, repeatedly enlarged, altered, and finally rerigged. The difference between the two in point of model was comparatively unimportant, but while *Madeline* was fitted in perfect trim from her polished copper bottom to her light club topsail, *Countess of Dufferin* suffered in finish and equipment from the limited capital of the syndicate. In the first race she was beaten by eleven minutes over the club course, and in the second, outside the Hook, she was beaten by nearly half an hour.

Four years elapsed before the next challenge, which was also from Canada, the yacht, *Atalanta*, being modelled and built by Captain Cuthbert for a syndicate of the Bay of Quinte Yacht Club. The same agreement was made as in the previous match, — a series of two out of three races, one over the inside course, against a single yacht named in advance by the defending club. While *Countess of Dufferin* had sailed from Lake Ontario to New York by way of the St. Lawrence and the sea, *Atalanta* was greatly delayed in completion. There being again a lack of the necessary funds, she was not launched until early in September, and it was determined to take her

to New York by way of the Erie Canal and Hudson River. This was done with some difficulty; the yacht, stripped of her spars, being heeled as far as possible on one bilge, to permit her passage through the locks. She reached New York on October 30, in a most unfit condition for racing, — a new boat, not yet finished and never fully tried. When docked, her bottom was as rough as a board fence, the time being too short to permit of that painting, rubbing down, and repainting which is necessary to put a new yacht in racing shape.

This year the selection of a defender was made by means of a series of trial races, which will be described in a more appropriate place, the choice falling upon *Mischief*, a new iron sloop. In model *Atalanta* was quite up to the average sloop of her day, but *Mischief* represented a distinct advance on the older boats, in model, rig, and above all in construction and ballasting, her lead being stowed against her iron bottom plating. In one point alone she was minutes faster than her opponent. After all the preliminary preparation for the trial races she was docked again, and her smooth bottom was scraped, painted, varnished, and pot-leaded until it shone like a well-polished boot.

The first race was sailed on November 9, an

unusually late date, *Mischief* winning by nearly half an hour; on the following day they sailed sixteen miles to leeward from Buoy No. 5 off Sandy Hook and return, *Mischief* winning by over half an hour. The match was fruitless except to point the old lesson, that perfection in detail is of more importance than any ordinary difference of model.

One very important result followed, however, as shortly after the match the New York Yacht Club voted to return the America Cup to Mr. George L. Schuyler, the sole survivor of the original five donors, who was to redonate it upon new terms. These, as set forth in the "Second Deed of Gift," were as follows:—

Second Deed of Gift

Any organized yacht club of a foreign country, incorporated, patented or licensed by the Legislature, admiralty or other executive department, having for its annual regatta an ocean water course on the sea or on an arm of the sea (or one which combines both), practicable for vessels of 300 tons, shall always be entitled, through one or more of its members, to the right of sailing a match for this Cup, with a yacht or other vessel propelled by sails only, and constructed in the country to which the challenging club belongs, against any

one yacht or vessel as aforesaid, constructed in the country of the club holding the Cup.

The yacht or vessel to be of not less than 30 nor more than 300 tons, measured by the Custom House rule in use by the country of the challenging party.

The challenging party shall give six months' notice in writing, naming the day for the proposed race, which day shall not be later than seven months from the date of the notice.

The parties intending to sail for the Cup may, by mutual consent, make any arrangement satisfactory to both as to the date, course, time allowance, number of trials, rules, and sailing regulations, and any and all other conditions of the match, in which case the six months' notice may be waived.

In case the parties cannot mutually agree upon the terms of the match, then the challenging party shall have the right to contest for the Cup in one trial, sailed over the usual course of the annual regatta of the club holding the Cup, subject to its rules and sailing regulations, the challenged party not being required to name its representative until the time agreed upon for the start.

Accompanying the six months' notice, there must be a Custom House certificate of the measurement, and a statement of the dimensions, rig, and name of the vessel.

No vessel which has been defeated in a match for this Cup can be again selected by any club for its representative until after the contest for it by some other vessel has intervened, or until after the expiration of two years from the time such contest has taken place.

Vessels intending to compete for this Cup must pro-

ceed under sail on their own bottoms to the port where the contest is to take place.

Should the club holding the Cup be for any cause dissolved, the Cup shall be handed over to any club of the same nationality it may select, which comes under the foregoing rules.

It is to be distinctly understood that the Cup is to be the property of the club and not of the owners of the vessel winning it in a match, and that the condition of keeping it open to be sailed for by organized yacht clubs of all foreign countries, upon the terms above laid down, shall forever attach to it, thus making it perpetually a challenge Cup for friendly competition between foreign countries.

GEORGE L. SCHUYLER.

The most important point about this new deed, as compared with the first, is that a great change of form was made to strengthen and justify the position of the New York Yacht Club against a mutual agreement as the first basis of negotiation for a match. The prominent feature of the original "Deed of Gift" is the position of the "mutual agreement" clause, immediately following the first statement of the qualifications which make a club eligible as a challenger, and the general limits of size of the vessels. It would seem from the whole form and tenor of the first deed, that the donors contemplated a mutual agreement as the natural

and proper basis of a match, the minimum terms being inserted only as a last resort after a failure to agree. In the second deed, however, the initiative for a challenge must come, not in the form of overtures for a mutual agreement, but in a formal notice naming the day between six and seven months distant, and giving the particulars of the challenging vessel. After this, there *may* be a mutual agreement on the minor details of the races. The result of this change was to place the challenger, after his challenge had been accepted, in the position of requesting as favors what should have been his by right of fair sport.

The six months' notice, which was merely one of the ultimate conditions in the first deed, is here advanced to a very prominent position as one of the first elements of a match. The subject of dimensions is left as vague and indefinite as the term "length" in the first deed. It may be construed to include all that at a later date were considered the fundamental dimensions of a design; on the other hand, used as it is in connection with custom-house measurement, it may be assumed to refer only to the measurements ordinarily taken in connection with tonnage.

Some points in the deed bear directly on the two

Canadian challenges; all Canadian yacht clubs, save the Royal Nova Scotia Yacht Squadron, were excluded, this being the only one with a course on the sea. All canaling was prohibited by the provision that the challenger must "proceed under sail." Taken all together, the revision in no way improved the original deed or tended to perpetuate the spirit which inspired it.

CHAPTER IX

THE DEVELOPMENT OF DESIGN IN AMERICA

The story of American yachting is a rope of many strands, each made of innumerable yarns. The "core" is the America Cup; about it twine many other subjects: the New York Yacht Club, the growth of a national club system, the racing of small yachts, the improvements in model and construction. In following the America Cup through the initial period of its races we have passed over some very important episodes, and it is necessary to turn back to the early seventies. We have already seen how the yacht first originated from the prevalent types of revenue cutters, fishing vessels, and pilot-boats on both sides of the Atlantic, and how, about 1850, the first primitive yachts were replaced by others having a distinct type of their own, the building and altering of these craft bringing in a distinct class of workmen.

The yacht type in England was the result of several conditions, — the tonnage rule under which

for many years all yachts were measured for racing as well as for price in building, the rough and open waters on which it was necessary to sail, and the conservatism of British yachtsmen in retaining the characteristics of the sea-going vessel in their pleasure craft. In this country, while at the outset yachtsmen were divided between the sturdy sea-going type of keel boat represented by the *America* and the harbor-sailing centre-board skimming-dish represented by *Maria*, in course of time the latter prevailed exclusively, except in the schooner division.

Through nearly thirty years, up to 1880, the keel yacht of moderate size was so rare about New York as to be notable as an exception to the universal rule of shoal-draft centre-board. The production of these yachts was left entirely to the professional builders, who cut the model and from it built the yacht. As a class these men were good mechanics, familiar with certain classes of vessels, but with limited education and absolutely ignorant of the elemental laws of naval architecture. Some of them possessed a sense of form which enabled them to turn out clean and handsome models, many of them were fairly successful through shrewdness and common sense

rather than technical skill, while not a few were wedded indissolubly to private fads and original theories of their own, exemplified in their yachts. Yacht owners as a class paid little attention to the technical side of the sport, leaving it to the builders and the professional sailing-masters.

The result of these conditions was that design followed a downward groove. In their efforts to obtain speed, builders exaggerated the extreme skimming-dish models; and even in large cabin yachts that were nominally intended more for cruising than racing, the important items of stability and seaworthiness were entirely neglected. The capsizing of small open boats and yachts, even when attended with fatal results, was too common to attract much notice; and the large yachts came in for a full share of very narrow escapes, with an occasional disaster such as that of *Mohawk*, but for a long time the important question of stability was practically ignored by all classes of yachtsmen.

It was in 1871 that the Seawanhaka Yacht Club was organized by some gentlemen who had been for years sailing open centre-board boats about Oyster Bay and cruising in larger craft on the Sound. From the outset they took up the

cause of Corinthian yachting in its broadest form, the personal knowledge of the technical side of yacht building and sailing, and in particular the encouragement of owners in sailing their own yachts. The club grew rapidly and soon attracted to itself such men as Robert Center, C. Smith Lee, John Hyslop, and W. A. W. Stewart, — all actively interested in the subject of design — as well as most of the owners of the racing yachts of the day.

After crossing on board *Fleetwing* in the race of 1866, Mr. Center spent some time abroad, becoming thoroughly familiar with the British cutter and with racing as it existed at the time in English waters. On his return, in 1870, he brought from London a copy of a new work, "Yacht Building," by Philip R. Marett, an amateur yachtsman and designer. At that time there was very little to be had in the way of technical yachting literature, either in England or America, this book being the pioneer in a new field. Mr. Marett urged upon all yacht owners the absolute importance of possessing at least an elementary knowledge of design and construction, and he practised what he preached by making his book a very thorough and complete treatise on these

subjects. As the basis for his work he collected such data as were then available in the way of lines and elements of well-known yachts, arranging them in systematic order, and showing how the essential characteristics of yachts might be compared in the light of their actual performances. The subject-matter of the book was well within the comprehension of any intelligent man, the writer's ideas being sensible and set forth plainly and logically.

British Racing Cutter, 1870 to 1880.

With this book as a guide, Mr. Center determined upon a new yacht, planned on the most revolutionary principles. The vessel was to be of the cutter type, with no centre-board, but with a fixed keel under her deep body; she was to be planned entirely on paper, without recourse to a block model; and she was to be built of iron throughout. His associate in this work was A. Cary Smith, a marine artist who had begun life as a willing apprentice to Captain "Bob" Fish in the latter's boatshop at Pamrapo.

Working together, they planned the first American cutter, *Vindex*, following closely the lines of the famous *Mosquito*, already mentioned, as given by Marett. The yacht was built by Reaney, Son & Archbold, at Chester, Pennsylvania, being launched in 1871; she was 62 feet 5 inches over all, 56 feet 4 inches on the water-line, 17 feet 3 inches wide, and drew 8 feet 10 inches; her depth of hold was 6 feet 7 inches, and her tonnage 54.34 tons. In comparison with her may be mentioned *Vision*, long known as one of the leading centre-board sloops of her class, built in 1872. She was 66 feet over all, 52 feet 4 inches on the water-line, 20 feet 9 inches wide, and drew 5 feet 9 inches, with a depth of hold of 5 feet 11 inches, and a tonnage of 58.52.

Vindex was built with iron frames and plating and a plate keel of iron about one inch thick, her ballast being lead stowed on the frames and skin; but later on a part of this was cast in slabs and bolted to the keel, as in the modern fin-keel yacht. Her fittings and deck joiner work were strong and solid, for work at sea, in contrast to the light and flimsy fittings of the ordinary sloop yacht. She was rigged as a cutter, and steered with either a wheel or a tiller.

The first of her kind, and the work of amateurs, she possessed some serious faults, but in the hands of her plucky Corinthian owner she first proved the sterling merits of her type and build by winter yachting at sea; then, in the regular season, she shared the prizes with the light-weather boats of the Sound. In the end she fully justified the ideas of her owner, and started a reform which was greatly needed. It was in the sometimes heated controversy over her individual merits and demerits, which lasted for several seasons, that the important issues of the cutter model and rig, the designing of yachts by methods similar to those of the house architect, and iron construction, were introduced into yachting.

The second American cutter was built in 1876 at Port Richmond, Staten Island, from the designs of her owner, John Hyslop. *Petrel*, as she was named, was 32 feet over all, 28 feet on the water-line, 8 feet wide, and of 4 feet 8 inches draft. She was in no sense an imitation of the racing cutters of the time, but a cleverly designed application of the principles of the cutter to American conditions. She was built of wood, with two-thirds of her ballast on the keel.

In the following year Mr. Center had built

from his own designs a third cutter, *Volante*, the building being done by John F. Mumm, at the foot of Court Street, Brooklyn. She was intended as a model cruising yacht for the Messrs. Hitchcook, young nephews of Mr. Center, and her dimensions were: length over all, 45 feet; load waterline, 40 feet; breadth, 12 feet; draft, 7 feet. She carried a good part of her ballast in the form of a lead keel, and she was rigged as a cutter. Both of these yachts proved successful, doing regular work as cruisers, for which they were well fitted, and yet winning many races.

The discontent on the part of many yachtsmen with the existing conditions of design and construction found forcible expression after the capsize of *Mohawk*, which some attempted to defend as a visitation of Providence which might have fallen on any vessel, regardless of type, while others looked upon it as a most inexcusable and unnecessary sacrifice to ignorance. A discussion gradually arose which in time embraced a large number of important points: the necessity for the professional yacht designer, with his plans on paper, in place of the builder with his block model; the dangerous initial stability of the sloop as opposed to the wide range of stability

of the cutter; the merits of the two types in point of speed and seaworthiness; the relative values of breadth and depth as exemplified in sloop and cutter; the merits of iron as opposed to wood in construction. At the outset the only semblance of technical discussion was made by a few of the better informed amateurs, but by degrees yachtsmen became sufficiently interested to seek reliable information.

The Seawanhaka Club, which by this time had officially adopted the title "Corinthian" as an index of its principles, was most active in promoting the practical study of the different branches of yachting science, as well as in encouraging Corinthian sailing on the part of its members, many of its races being open only to yachts manned with amateur crews and steered by amateur skippers.

Thus far few yachtsmen were bold enough to intrust the production of a yacht to a designer who would work from a plan on paper, but in 1877 Cary Smith designed the schooner *Prospero* for G. H. B. Hill, and in the following year he attempted a much more important work, — the designing of the cruising schooner *Intrepid*, of 101 feet water-line, for Lloyd Phœnix.

The building of this yacht, of a new model and with many notable changes in details of hull and rig, was the subject of a very heated discussion during the winter; but, in the end, like *Vindex*, she refused to sink, as predicted by some of the critics, and proved herself an admirable sea-boat, being still in use to-day, after cruising many thousands of miles. It was during this same winter that Mr. Cary Smith, at the request of the Seawanhaka Corinthian Yacht Club, delivered a series of lectures on yacht designing which were generally appreciated.

The attention of American yachtsmen was attracted to the British cutter then in the course of rapid evolution, the recent placing of all or nearly all the lead ballast in the keel permitting a reduction of breadth which gave great advantage under the rule, — the consequence being that each successive season witnessed the launching of narrower and deeper boats with greater displacement and heavier keels. A small party of progressive yachtsmen, known in derision as "cutter cranks," upheld the narrow cutter as far safer and a better sea-boat and also faster than the wide sloop; the great majority of yachtsmen still believed in the sloop model and rig as

embodying something more than perfection; while between these two camps were a moderate number who, condemning the centre-board sloop as she then existed, and, praising the general principles of the cutter, advocated what was called the "compromise" type, of moderate breadth, much greater depth and draft than the sloop, outside ballast, and a rig patterned only in part after the cutter.

The first narrow cutter was *Muriel*, designed by John Harvey and built by Henry Piepgrass at Greenpoint, Long Island, in 1878, for James Stillman. She was 45 feet 6 inches over all, 40 feet 6 inches on the water-line, 9 feet 2 inches in width, and drew 7 feet 9 inches. In the following year the same builder turned out a smaller cutter, *Yolande*, designed by her owner, M. Roosevelt Schuyler, the leader of the cutter advocates; she was 31 feet 3 inches over all, 26 feet 9 inches on the water-line, 7 feet 1 inch in width, and drew 5 feet 2 inches. Both *Muriel* and *Yolande* raced at times with varying success, but as cruisers they were far more successful.

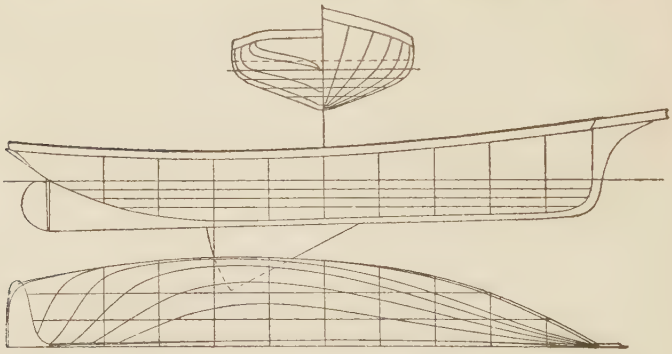
The first really important result of the agitation which virtually began with the designing of *Vindex* eight years before was the construction of

Mischief, the "compromise sloop," as she was called, in 1879. She was designed by Cary Smith for Joseph R. Busk, an Englishman resident in New York, — in appearance and manners a typical Britisher, but in yachting a stanch partisan of the centre-board sloop. *Mischief's* dimensions were: length over all, 67 feet 5 inches; load water-line, 61 feet; breadth, 19 feet 10 inches; draft without board, 5 feet 4 inches. In model she differed widely from the older sloops of her class, her hull was built of iron, and her rig was a compromise between sloop and cutter.

Mischief.

In the early days of yachting all the vessels of the fleet raced together as one class, with no distinction of size or rig. At a later period the two leading rigs, schooner and sloop, were separated into two classes; and in course of time the yachts

of each rig were subdivided according to size. Toward the end of the seventies, by a process of natural segregation, two classes began to form out of the larger sloop yachts owned and raced about New York. The larger of these is best known as the 70-foot class, the smaller as the 50-



Arrow.

foot. In the former were *Gracie*, *Fanny*, *Hildegarde*, *Vision*, and *Arrow;* in the latter, *Vixen*, *Regina*, *Madcap*, *Whitecap*, and some smaller yachts of less note. When *Mischief* was built, she came into the 70-foot class, and about the same time the 50-foot class was increased by the Ellsworth sloop *Fanita.*

Mischief soon set the pace for the older wooden boats, and when the challenge came from

the Bay of Quinte Yacht Club, there was some very keen rivalry already existing within the class. *Arrow*, built by David Kirby, was considered by many the fastest boat in the class; and in order to make certain of an adequate defence of the Cup against the unknown *Atalanta*, the flag-officers of the club, Commodore John R. Waller, Vice-Commodore James D. Smith, and Rear-Commodore Hermann Oelrichs, formed a syndicate to build a new Kirby sloop. The number of competitors for the honor of meeting the challenger, and the ardor of the champions of *Gracie*, *Arrow*, *Mischief*, and *Hildegarde*, made the choice a difficult one, and for the first time it was decided to hold a series of trial races for the selection of the one defending yacht.

The first of those "trial races" which have since been an essential element of every Cup match, was sailed on October 13, 1881, *Mischief* winning from *Gracie*, *Hildegarde*, and *Pocahontas*. The second race was won by *Gracie*, and the third by *Mischief*, — the "Iron Pot," as the latter was affectionately nicknamed by her admirers, being chosen to defend the Cup. As already related, the final races between *Mischief* and *Atalanta* were very hollow affairs, involving no special

principles; but the trial races were really important events, the result demonstrating the superiority of the new ideas embodied in *Mischief*.

The three important men of this interesting era of transition from old to new are Robert Center, A. Cary Smith, and John Hyslop. To their efforts, both individual and united, are due many of the reforms which have contributed to raise the sport to a higher plane and to advance the science of yachting. Robert Center was born in New York and joined the New York Yacht Club as a young man in 1862. Possessed of independent means, from his early youth he was devoted to all forms of sport, his chief pleasure being in yachting. In every sport in which he was interested he never stopped until he had mastered the technical side and was also an expert in actual performance. In yachting he was a finished draftsman, well versed in the theory of design, a thoroughly practical navigator, and usually at the wheel of his yacht in person. He was always active in club work, filling many offices and serving on many committees in the New York and Seawanhaka clubs. He rode one of the first velocipedes brought to New York from Paris in 1867, he was one of the most enthusi-

astic members of the New York Bicycle Club in the days of the old high wheel, and he again resumed the sport and rode regularly when the modern pneumatic-tired wheel came into use. His death was due to an accident while riding a wheel, a heavy wagon turning from the wrong side of a car and striking him down. He was a good friend to all young yachtsmen, and by his precept and example did much to induce yachtsmen to follow him in the study of designing, navigation, and practical sailing.

Archibald Cary Smith was born in New York, the son of a Presbyterian clergyman, and as a boy developed such a fondness for yachts that when eighteen years old he was allowed to enter the shop of Captain "Bob" Fish, at Pamrapo. Under that capable mentor he learned the art of modelling, as practised at that day, with some gouges and chisels and a block of soft wood, and also the construction and rigging of yachts. He became an expert skipper in the open racing yachts of the day, winning many races in yachts of his own design. Later in life he studied painting and made a reputation by his marine pictures. An intimate personal friend of Mr. Center, he undertook to design *Vindex* for him, being the

first man, so far as the records show, to discard the model and make a design for a yacht. By degrees he abandoned painting, his time being fully occupied in designing yachts and commercial steamers. He has served as measurer for both the New York and the Seawanhaka clubs, and he has taken a prominent part in measurement legislation and similar technical work. To him is due the great change in the models of the Sound and river steamers, the old hollow bows giving way to the modern round, full lines first used successfully in racing yachts and then tested by him in the *Richard Peck*, the *City of Lowell*, and the *Chester W. Chapin*, — all notable boats.

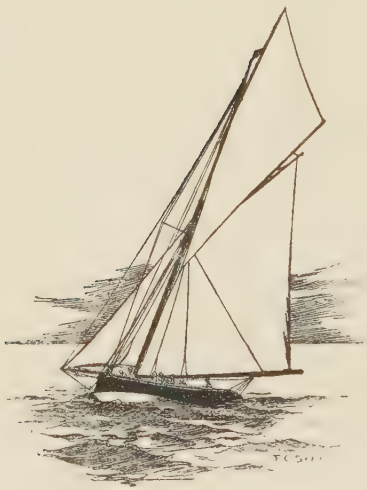
John Hyslop began his yachting by sailing models in Liverpool many years ago. Early in the sixties he moved to New York, and throughout a life of business activity he has always found time to work for the advancement of yachting and at intervals to follow it as a sport. After sailing models for a time in this country, he built and owned several centre-board sloops of the common type; but in 1876 he designed and had built *Petrel*, already described, racing her very successfully for some years. Prior to this he devoted

much time to the study of form, and about 1877 gave to the world the result in the formulation of the theory of the distribution of the displacement according to the characteristics of the wave form, now universally accepted by designers. In this work he perfected and put to practical use for the first time the ingenious but incomplete theories of John Scott Russell.

From his first connection with yachting, Mr. Hyslop took a deep interest in the allied questions of design and measurement. He was measurer of the clubs to which he then belonged, and always ready to battle for better rules and methods. To him is due the length and sail area rule, first adopted by the Seawanhaka Corinthian Yacht Club in 1882, and remodelled the following year, when it was adopted by the New York Yacht Club, and later became the universal rule in this country. To him is also due the rule now in use by the Larchmont and Seawanhaka clubs, and in a modified form by the Yacht Racing Association of Long Island Sound. For many years he measured the yachts of the New York, Seawanhaka, and Larchmont clubs, including many of the Cup competitors.

CHAPTER X

THE BATTLE OF THE TYPES



Madge.
Typical cutter rig of 1880.

The few cutters built during the seventies, *Vindex*, *Petrel*, *Valiant*, and *Muriel*, were insignificant in comparison with the large number of centre-board yachts of all sizes, and they were in no way threatening to the national type; the designing of *Mischief*, however, brought several new elements into the growing controversy, and the adherents of the extreme old type of wooden sloop and of her rule-o'-thumb builder were called on to defend themselves more actively. *Mischief* showed something of her quality in her first sea-

son, 1880; but in the following summer and in the trial races of the fall she fully proved her superiority to the larger sloops of her class, and justified the claims of the more moderate reformers.

Early in the summer of 1881 there was launched another yacht of Mr. Smith's design that represented a still more advanced step toward the cutter. *Valkyr*, built to the order of Dr. B. F. Dawson, of New York, may be classed as a compromise *cutter* in distinction from *Mischief*, the compromise *sloop*. She was much wider and of less depth and draft than the British cutter of the day, and she had a centre-board as well as a keel; but in her general form she resembled the cutter. She carried a cutter rig, and her great depth and outside lead keel marked her as of a type having nothing in common with the centre-board sloop. She was 54 feet 6 inches over all, and 46 feet 6 inches on the water-line, thus with a plumb stem having ten feet of after overhang fashioned like a cutter's counter. Her breadth was 15 feet, depth 7 feet 3 inches, and draft 5 feet 3 inches. The centre-board was of moderate size, auxiliary to the keel. She proved a very stanch and able cruising boat, and even-

tually defeated the crack skimming-dishes of the 50-foot class. Whatever might be urged against the extreme narrow cutter, *Valkyr* had to be dealt with solely on her merits, as embodying the essential points of the cutter adapted to American wants and waters.

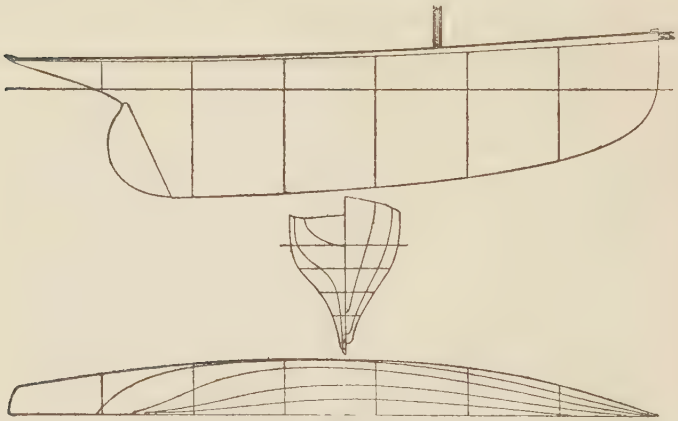
Later in the same year was launched a still more extreme type, a keel cutter with the depth of the English type but of greater breadth, — *Oriva*, designed by John Harvey for C. Smith Lee, of the Seawanhaka Corinthian Yacht Club, and built by Henry Piepgrass. Her dimensions were: length over all, 62 feet; load water-line, 50 feet; breadth, 11 feet 8 inches; depth, 9 feet; draft, 9 feet 6 inches. With the other dimensions of the English 20-tonner of the day, she had about two feet more breadth, to fit her to American conditions. While the rig of *Valkyr* was somewhat modified in detail from the true British cutter, that of *Oriva* was after the conventional pattern, even to the loose-footed mainsail and the chain halyards for her jib.

To these four representatives of various types was soon added a fifth in the cutter *Madge*, the champion 10-tonner of her day, shipped out from Glasgow to New York on the Anchor Liner

Devonia, on much the same venture as that of the *America* thirty years before. Her owner, James Coats, of Paisley, still a well-known personality in Scotch yachting, was then an active racing man. She was built in 1879 from the design of George L. Watson, then at the beginning of his career, and for three seasons she was most successful in the Scotch and English regattas. She was a typical narrow cutter, her dimensions being: length over all, 46 feet 1 inch; load water-line, 38 feet 6 inches; breadth, 7 feet 9 inches; depth, 6 feet 6 inches; draft, 7 feet 10 inches. She was built of wood, but in a manner far superior to that of the sloops of the time; she carried ten tons of lead on her keel; and her great depth gave her headroom in the cabins under a flush deck, without the inevitable "cabin trunk" of even the larger American yachts.

Crude as they look to-day, *Madge's* ironwork, spars, blocks, and fittings were years in advance of the current American practice. With a short lower mast and an excessively long topmast, the latter fitted to house, she had comparatively little canvas in her mainsail, but with the big club topsail set she showed a lofty rig. Her bowsprit was so rigged as to house or run in on deck, and

in heavy weather she could quickly be brought down to snug spars and a very small but effective spread of sail. Her decks were kept beautifully white, her topsides were a glossy black, and her bottom was coppered to a point well above the water-line, giving her a strange look to Amer-



Madge.

ican eyes. While many of the sloops were at that time manned by such hands as could be picked up alongshore for a race, no two dressed alike, the crew of *Madge* looked smart and trim in their working uniform, or knit jerseys and knit caps, with Mr. Coats' colors, blue and white.

In the preceding year Mr. Coats, who had lived in America, imported from America a Newport

cat-boat, the *George and Annie*, with a young Yankee skipper, and raced her on the Clyde to test her with the small Scotch boats. In a similar spirit he determined to send *Madge*, then the representative boat of her type and class, to America, to test conclusions with the centre-board sloops. Being unable to make the trip with her, she was intrusted to his skipper, James Duncan, a very clever yacht sailor and a Scotchman with all the native shrewdness and hard sense of his people. The management of the yacht was in the hands of Captain Duncan and Mr. W. L. Blatch, a Scotchman residing in New York and a member of the New York Yacht Club.

On her arrival at New York, on August 16, *Madge* was hoisted over the side of the *Devonia* and towed to Staten Island, making her moorings off the Seawanhaka Corinthian Yacht Club station at Tompkinsville. She was quickly refitted by Captain Duncan and his crew, and in a few days was sailing about the bay. The interest in yachting was very keen at this time, the coming trials of the big sloops, the match for the America Cup which was to follow, and the growing controversy on technical subjects, all helping to enliven it. *Madge* was, for the moment, the

centre of attraction, and every yacht about New York was out to watch her sail. Somehow she seemed to sail but poorly, and a number of yachts passed her in the informal scrub races. Meanwhile arrangements were made by Mr. Blatch for private matches with some of the fastest representatives of the sloop class, *Schemer*, *Wave*, and *Mistral*, while negotiations were started for a match at Newport with the Boston sloop, *Shadow*. In the popular mind and in the daily press the whole matter was settled before the first race. The narrow "diving-bell," as she was called, had no chance against the sloops which sailed on top of the water instead of cutting through it.

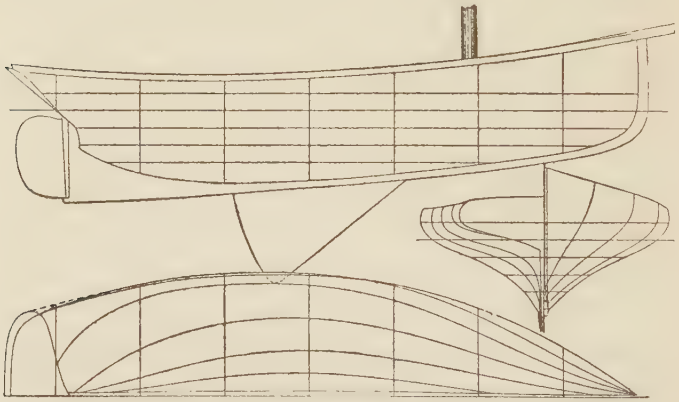
The first race, for a $100 cup, was with *Schemer*, one of the best of her class, the course being from off Staten Island, out around the Sandy Hook light-ship and return, in a southwest wind, light to moderate. At the outset there was hardly a question as to the result among the many spectators, but to the surprise of nearly all, as soon as *Madge* got under way with her big club topsail set, she moved very fast, and before the Southwest Spit was passed she had won the race. She finally finished 5 minutes 41 seconds in the lead. On the follow-

ing day, September 28, she was matched with *Wave*, another noted sloop, the weather being light and fluky. *Madge* won by 11 minutes 46 seconds, actual time.

The third victim was *Mistral*, whose owner had readily agreed to a match for a $250 cup at the time when *Madge* stock was at its lowest. There was more wind and some sea in the Lower Bay, and *Mistral*, after shaking her rig to pieces and partly filling, was glad to give up and go home, leaving *Madge* to sail around the light-ship alone. On the fourth day, the third of the Seawanhaka match, there was no wind, and *Schemer* was selected in preference to *Wave*. She was first away in a very light air, and *Madge* sailed a stern chase all day, being seven minutes astern at the light-ship, and the same at the Southwest Spit. The run in from the Spit was before the wind, *Madge* dragging her heavy keel at a depth of eight feet, while *Schemer*, drawing

Schemer.

three feet, had her board housed. *Madge* made up two minutes in the few miles under conditions which were considered prohibitive for her, and though beaten on actual time, she won by allowance. In a private match with *Schemer*, set for



Shadow.

Lines taken from yacht by John Hyslop and W. P. Stephens.

the following day, the latter did not come to the line and *Madge* sailed over the course. A match was made with *Paloma*, another sloop, but it was not sailed, and a final match with *Wave* also failed, leaving *Madge* the unquestioned champion of New York waters. After this she sailed for Newport, where she was matched with *Shadow*.

Built in 1871, and still in commission, with a

racing record covering nearly a quarter of a century, *Shadow* represents the best type of centre-board sloop, well proportioned and fairly deep. She was built by the Herreshoffs, and the model is claimed by them, but there is some difference of opinion on this point. The yacht was built for Dr. Sisson, of New Bedford, and, according to the current belief among New Bedford yachtsmen, he was personally responsible for the model. It is certain that the yacht, which has many points of excellence and has proved wonderfully successful through an unusually long racing life, differs much from those Herreshoff models which immediately preceded as well as those which followed her, and gives no evidence of relationship. Her dimensions are: length over all, 37 feet 1 inch; load water-line, 34 feet 2 inches; breadth, extreme, 14 feet 4 inches; breadth on water-line, 13 feet 1 inch; draft, without board, 5 feet 4 inches. She carried five tons of ballast inside the skin, and the usual sloop rig.

The first race was sailed over a leeward course and return, — about twelve miles each way. Off the wind *Madge* gained over a minute and a half, but in starting to windward she was poorly handled, two of her crew being green hands in

cutter sailing, and one of her big spreaders was broken, laming her on the port tack. She was eventually beaten by nearly twenty-three minutes. On the following day they sailed over a 30-mile triangle, *Shadow* carrying one reef part of the time. She was out-sailed over the windward leg and the reach, but just held her own under spinnaker. Three days later a match was sailed with *Wave*, over a 30-mile triangle, *Madge* gaining five minutes in the ten miles to windward, but finally winning by only two minutes, on actual time. In all of these races *Madge* was allowed time in varying amounts according to the rules of the Seawanhaka and Eastern clubs; owing to the very great variation in type and dimensions, there was a great difference of opinion as to what would be a fair allowance between her and the sloops; but as a matter of fact, though in many ways the

Shadow.

Typical sloop rig of 1880.

smallest boat, she won six races out of seven on actual time, without calling on her allowance.

This bare record gives but a faint idea of *Madge's* superiority, which was shown in the mechanical details of construction, rig, and sails, the manner in which the yacht was kept in perfect shape for racing, the skilful handling of Captain Duncan, and the work of his crew. Apart from the breaking of her spreader in the race with *Shadow*, *Madge* sailed the series without injury, while *Schemer*, *Mistral*, and *Wave* were more or less in the condition of *Columbia* after her races with *Livonia* in 1871, — *hors de combat.*

The victory of *Madge* proved almost beyond the possibility of dispute all that had been urged against the shoal-draft centre-board sloop and schooner, and left the partisans of this type for the time confounded. The very confidence and vehemence which they had displayed while *Madge* was idly sailing about with no topsail, made her ultimate victory a more complete rout. *Shadow* had in a measure saved the sloop cause from utter extinction; but then she, in common with other eastern yachts, was of a far less extreme type than that produced by and used on the Sound. On the part of the "cutter cranks"

the result was accepted as final proof of the superiority of the most extreme type of narrow cutter. Between these extremes, the silenced and confounded sloop advocates and the joyous and hopeful "cutter cranks," were many who began, in varying degree, to appreciate that,

Gracie.

without going to extremes, there was much in the leading features of the cutter, in the making of sails, and in the perfection of British racing routine, that was lacking in American yachting. Like the *America*, *Madge* taught a lesson of careful thought and earnest work in all branches of yachting.

Almost coincident with the final *Madge* races at Newport came the trial races between *Gracie*, *Hildegarde*, *Pocahontas*, and *Mischief*, in which the latter triumphed, while *Pocahontas*, the new boat of the year, and built to vindicate the cause of the shoal sloop, made an ignominious failure.

The battle of type grew hotter and hotter from this time on, there being practically three parties participating. The largest was that which, after abandoning its original position, maintained the cause of the centre-board sloop with certain modifications in the form of a rather deeper model, some outside ballast, and improvements in rig. The next in size took the side of what may best be called the compromise cutter, of moderate breadth and draft, with keel or centre-board according to circumstances, and a modification of the cutter rig, with laced cotton mainsail and fixed bowsprit. The third party included the original "cutter cranks" and quite a large following of converts in the wake of *Madge*, all upholding the English or Scotch cutter of the day, very narrow and deep, with housing bowsprit, immense club topsail, and loose-footed mainsail, the foot not laced to the boom; all sails being of hemp.

During the winter two new cutters were started, — *Bedouin*, of 70 feet water-line, and *Wenonah*, of 60 feet, — both designed by John Harvey and built by Piepgrass, the former for Archibald Rogers and the latter for James Stillman. At the same time the 15-tonner *Maggie*, the best of her class, was purchased in England and shipped by steamer to Boston for George H. Warren of the Eastern Yacht Club.

The season of 1883 was an exciting one, many races being sailed with varying results. The new cutters were mainly in charge of imported British skippers; but their Corinthian owners were desirous of handling the tiller themselves in the races, and as they lacked experience in this type of boat, they were frequently beaten by the sloops. At the same time, however, they scored some important victories, the proportion regularly increasing as they became better versed in the handling of the new craft.

The controversy was by no means limited to the yacht fleet and the yacht clubs, but soon made its way into business and general club circles, especially about New York, every chance meeting of yachtsmen being the occasion of a discussion over types and models, over Lap-

thorne's sails as compared with those of Wilson or Sawyer, or the merits of some favorite builder or designer. Not the least amusing part of the dispute was that in the press, where the war waged fast and furious for several years. The leading partisans of the American type were Captain Coffin and Captain McKay, both old reporters skilled by years of practice in journalism. The former, one of the old-time merchant captains in his youth, a member of the noted Coffin family of Nantucket, was an expert stenographer, and for many years reported every Sunday the sermons of Henry Ward Beecher. His practical knowledge of the sea was backed by good judgment and a knowledge of yacht racing derived from long experience as a reporter; but in matters pertaining strictly to naval architecture and yacht designing, he lacked a technical education. Captain McKay was a member of the famous Boston family of shipbuilders and was brought up in a shipyard, being well grounded in the theoretical side of ship-building; later in life he commanded merchant vessels and finally became a reporter and writer on nautical subjects.

The foremost exponent of the side of the

"cutter cranks" was C. P. Kunhardt, an American and a graduate of Annapolis, an enthusiast on the subject of yachting. Brilliant and well educated, with a better technical training in naval architecture than his opponents and with a broader technical knowledge of yacht designing and the general history of yachting abroad, he was a fearless fighter and the possessor of an almost unlimited vocabulary. At the time of the first inception of the cutter agitation, or about 1878, he took sides against the "half-tide rocks," the "diving-bells," and the "lead mines," as the British boats were then called; but a little later he experienced a change of heart, and became the most earnest advocate of the extreme narrow cutter. The battle of these giants, beside whom all other writers were pygmies, added zest to the verbal discussions of yachtsmen within the clubs. While, on the one hand, every one of the frequent capsizes of centreboard yachts was exploited as evidence of the utter unsuitability of the type and of its inherent danger; on the other, such occurrences, even in the case of *Mohawk*, were laid to ignorance and carelessness on the part of the skipper, and not to the proportions and specific faults of model.

The fleet now included *Gracie*, *Mischief*, *Fanny*, and *Hildegarde*, with the cutters *Bedouin* and *Wenonah* in the 70-foot class; *Vixen*, *Regina*, *Valkyr*, and *Oriva* in the 50-foot class, with the imported cutter *Maggie* and some smaller cutters, added to which were various "compromise" models. Each race was seized on by these writers and made to prove the truth of their arguments, pro or con.

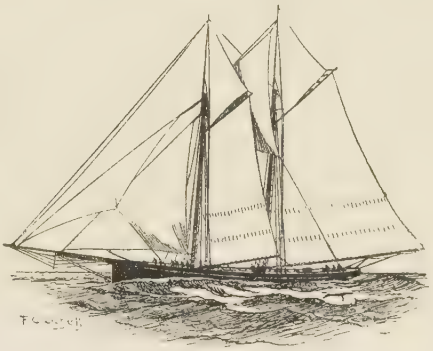
Fortuna.

In the winter of 1882 – 1883 two important additions were made to the schooner fleet, — the cruising schooner *Fortuna*, designed by Cary Smith for Henry S. Hovey, a fine example of the keel type; and *Grayling*, modelled by Philip Ellsworth for Latham A. Fish of the Atlantic Yacht Club. Built for racing according to the prevailing theories of the centre-board school, *Grayling*, on a water-line of 81 feet, drew but 5 feet 9 inches,

with all her ballast inside. The construction of such a yacht was naturally a bone of contention, one party claiming that she would be dangerous to a degree, and the other that, if not absolutely non-capsizable like a cutter, she could only be capsized by such gross carelessness as no competent yachtsman would be guilty of. The dispute was brought to an abrupt termination early in May, when, on the occasion of her trial trip, and within a couple of miles of her mooring, she was struck by a flaw of wind and ignominiously capsized and sank, her owner, skipper, and crew being rescued by near-by boats. By an odd coincidence Mr. Kunhardt, who had been absent from New York for some weeks, returned suddenly and unexpectedly from Central America on the morning after the capsize, in time to make the most of an event which he had practically predicted.

Throughout 1883 and the following year many good races were sailed, the interest between the opposing factions being so keen that old friendships were severed and the yachting world of New York and in part Boston was divided into two hostile camps. *Grayling* was raised and speedily repaired, and in the capable hands of Captain Norman Terry soon made a reputation

for speed in smooth water and a good breeze, while *Fanny*, *Fanita*, and others of the skimming-dishes won under similar conditions. There were many occasions, however, especially in very light weather, when the heavy-displacement cutters won; and still more when they scored easy victories in hard weather, or over courses which the centre-board boats did not care to face. The building of large yachts of extreme light draft became less and less common, and the influence of the cutter type was visible everywhere in deeper hulls, more freeboard, less sheer, longer counters, outside ballast, low cabin trunks, if not flush decks, and more or less exact imitations of the cutter rig.



Grayling.

From the early days of yachting, New York has been the national centre of the sport, more prominent in many ways than Boston and claiming first attention from the historian; but yachting

has always received a generous and hearty support from all classes about Massachusetts Bay, and in the matter of type the development has always been of a more healthy form. While the centre-board skimming-dish existed in considerable numbers and outrageous proportions, there has always been an appreciation of the value of depth and draft as factors of safety, even in centre-board boats; while the keel type has been well represented in point of numbers and in quality of model. While *Shadow* was deeper than most of her class, they in turn averaged much greater depth and draft than the New York yachts of similar classes. One of the early American cutters, designed by D. J. Lawlor of East Boston, was built in 1878 for Francis E. Peabody, of the Eastern Yacht Club; *Enterprise*, as she was named, was 50 feet over all, 43 feet 9 inches on the water-line, 15 feet 8 inches breadth, 6 feet deep, and drawing 7 feet 3 inches. At the time when the keel type was represented in New York only by half a dozen cutters, Boston could boast of a fine fleet of keel yachts, racing and cruising along the whole eastern coast.

After her Newport matches *Madge* was laid up there and Captain Duncan returned home, con-

tinuing in Mr. Coats' employ, and in 1883 taking command of the wonderful 68-tonner *Marjorie*, also designed by Watson, which he handled so successfully for many years. There was no reason for returning *Madge* to Scotland, and she was used for a time by friends of Mr. Coats, being finally sold, and falling into the hands of vandals who proceeded to fit her up for cruising by building bulwarks a foot high and three inches thick around her deck and filling her interior with heavy furniture with marble tops; at the same time her coppered sides were painted white to the water-line, until she was but a caricature of herself. Later on she was sold to Lake Ontario, where, still hampered by a part of this weight, she was sailed mainly with the idea of carrying her big club topsail as long as possible, so that she was usually seen with sails almost flat on the water.

So far as the recapture of the America Cup was concerned, the venture of *Madge* was a serious mistake, as it opened the eyes of American yachtsmen in a measure to the weakness of the national type and the real qualities of the cutter. There was for a time a rumor that *Marjorie* would challenge for the cup in 1884, but nothing

came of it; though it is now safe to say that, had she come out here in that year with Duncan in command, the whole history of yachting would have been changed, for she would in all probability have taken it home with her. Though the first confidence in the old sloop had been rudely shaken, national prejudice was still so powerful that one of the existing sloops, *Gracie*, *Mischief*, or *Fanny*, would have been selected to meet her, or a new sloop would have been built. In this latter case there would have been little doubt of the result, as the old builders of the day were vacillating weakly between the old ideas and the new, — not altogether firm in their belief in the former, and neither confident in the latter nor competent to utilize them.

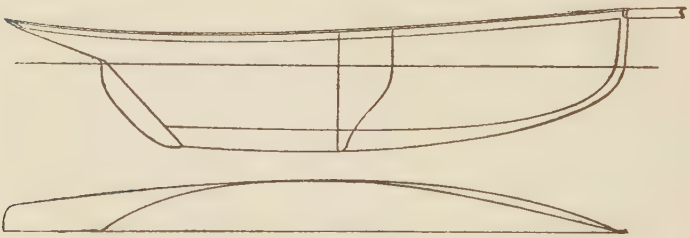
When the next challenge came, the course of evolution was moving with quickened pace and a great change was already imminent.

CHAPTER XI

BURGESS AND THE AMERICA CUP

The challenge which finally came late in 1884 was virtually a double one, the first informal notice, a letter from J. Beavor Webb, an Irish designer, naming the two 90-ton cutters designed by him, *Genesta* and *Galatea*, with the request that in the event of the defeat of the former the latter might be permitted to race during the same season. These two yachts were the latest representatives of the principal racing class in British waters, *Galatea* being as yet only on paper, while *Genesta* had just completed her first season by taking the bulk of the prizes from *Irex*, then in her first year. While both were of the same breadth, — 15 feet, — *Genesta* was 81 feet on the water-line and 90 feet over all, and *Galatea* was 5 feet longer on the water-line and 10 feet over all; both drawing the same, 13 feet 6 inches. *Genesta* was of composite build, steel frames and wood skin, with her ballast of 72 long tons entirely in her lead keel. *Galatea* was built of steel,

with 78 tons of lead moulded into the ballast trough formed by her steel keel. As events proved, *Genesta* was the better vessel, though a part of her superiority was due to the handling she received from Captain John Carter, one of the best racing skippers of his day. Both of these challenges, when finally confirmed in due form, were accepted, the general terms being that



Genesta.

each match should consist of a series of two out of three races, one over the club course and the others outside Sandy Hook, the challenging vessel being met in each case by a single representative of the defending club, named in advance of the first race.

The fact that the two challengers were from eleven to sixteen feet longer on the load water-line than the largest sloops and cutters of the New York Yacht Club fleet made it imperative

from the start that at least one new yacht should be built to meet them; and even if they had been more nearly of the length of *Gracie* and

Genesta.

Fanny, it is hardly probable that the old sloops would have been relied on after the increasing victories of *Bedouin*, *Wenonah*, and the smaller cutters. James Gordon Bennett, then commo-

dore, with William P. Douglas, the vice commodore, determined to build a yacht to defend the Cup, and the question of type again came up.

The opinions on the part of those immediately concerned and of the yachting public as well, varied by shades between two widely different extremes. The old centre-board sloop of the *Arrow* type still had its defenders who would build another *Maria;* others, less extreme, favored the "compromise sloop," of more modern form but still wide and shoal, with inside ballast, no outside keel, and sloop rig. Another party advocated the "compromise cutter," retaining much of the breadth and initial stability of the sloop with added depth of hull and a fixed keel of lead; some favoring a centre-board in addition, while others advocated a keel boat. Finally there were some who would meet the British cutters with American yachts of nearly the same type except for added breadth — enlarged *Bedouins* and *Wenonahs.*

The building of the Bennett-Douglas yacht was intrusted to the Cup committee, including Messrs. Philip Schuyler, J. F. Tams, C. H. Stebbins, Jules A. Montant, and Joseph R. Busk, this committee being also charged with the negotia-

tions and all detail connected with the actual sailing of the races. The question of type was settled by the choice of the "compromise sloop," and it was determined to build a bigger *Mischief*, the design of course being intrusted to Mr. Cary Smith. The dimensions finally determined on were: length over all, 94 feet; load water-line, 85 feet; breadth, 22 feet 6 inches; depth, 8 feet 7 inches; draft, 7 feet 9 inches. As in *Mischief*, there was very little outside keel, a large centre-board being relied on for lateral resistance. The hull was of steel, with lead ballast stowed inside; the stem was plumb, with a short counter aft; and the rig, in spite of the jib and fore staysail which replaced the typical single jib of the old sloop, was otherwise patterned after the sloop, with a comparatively short base and great height.

Following quickly on the announcement of this official attempt came the news of a second yacht, building in Boston for a syndicate of eastern yachtsmen, headed by General Charles J. Paine and J. Malcolm Forbes, the designer being Edward Burgess. Though long known in eastern yachting, Mr. Burgess was at this time unknown elsewhere, having been in business for less than two years. Born in 1848, at Sandwich,

on Cape Cod, one of several sons of Benjamin F. Burgess, a wealthy ship-owner and merchant of

Puritan.

Boston, he spent his youth largely on the water and among yachtsmen. With his brothers, Sidney

W. and Walter, he owned cat-boats as a boy, and in 1868 he had built by J. B. Herreshoff the centre-board sloop *Nimbus*, of 33 feet water-line, in which he cruised and raced for some years. With his love for yachting was a strong taste for natural history, and on graduating from Harvard in 1871 he devoted himself specially to entomology, being for a time an instructor at Harvard and afterward, for fifteen years, secretary of the Boston Society of Natural History. As a member of the Eastern, the Beverly, and the Dorchester yacht clubs and of the Somerset Club of Boston, and through his Harvard connections, he was closely associated with the leading yachtsmen of Massachusetts Bay and familiar with small and large yachts. He married in 1877 and continued his studious life; in 1883 he spent the summer on the Isle of Wight, and through his yachting experience abroad he became thoroughly familiar with the cutter type. His predilections were always toward the stanch and able yacht and deep-water sailing, and though never associated with the New York "cutter cranks," he was a believer in the cutter and on the cutter side of the controversy.

Owing to business reverses which befell his

father, in 1884, he, in connection with his brother Sidney, established the Eastern Yacht Agency in Boston, for the designing and selling of yachts. His knowledge of designing up to this time was only that of the educated and intelligent amateur, and his first work was in the superintendence of yachts built from designs by Watson, Dixon Kemp, and other British designers for Boston owners. He had built in 1881 the keel sloop *Moya*, 32 feet over all, 27 feet 6 inches water-line, 9 feet breadth, and 5 feet draft, and two years later he designed the keel sloop *Columbine*, 25 feet over all, 19 feet water-line, 7 feet breadth, and 4 feet 4 inches draft, for his own use. Prior to the planning of the new Cup defender his largest yacht was the cruising cutter *Rondina*, 38 feet over all, 30 feet 6 inches on the water-line, 8 feet in breadth, and of 6 feet 9 inches draft.

The syndicate was composed of the following, all yachtsmen and members of the Eastern Yacht Club and several of the New York Yacht Club as well: General Charles J. Paine, J. Malcolm Forbes, William Gray, Jr., Henry S. Hovey, William F. Weld, Augustus Hemenway, W. H. Forbes, John L. Gardner, J. Montgomery Sears, and F. L. Higginson. General Paine, one of the

prominent personalities of American yachting, was born in Boston in 1833, graduating at Harvard twenty years later and preparing for the law, though not engaging in active practice. He served through the Civil War, and after its close devoted himself to the management of a fortune invested partly in railroads in the West. He joined the New York Yacht Club in 1880, and for some years after owned the schooner *Halcyon*, racing her in eastern waters and with the club fleet about Newport and Vineyard Sound. With no pretence to a knowledge of designing or naval architecture, he was a keen yachtsman and personally interested in developing all the speed of which his yacht was capable, as shown in the career of *Halcyon* under his ownership.

J. Malcolm Forbes, one of the Forbes family so long famous in the annals of Boston shipping, had spent much of his life in yachting about Boston and Vineyard Sound, owning many yachts; in 1882 he built from Dixon Kemp's designs the cutter *Lapwing*, of 35 feet water-line and 10 feet breadth, and he was familiar with the keel type. W. H. Forbes, of the same family, owned the keel sloop *Hesper*, designed for him

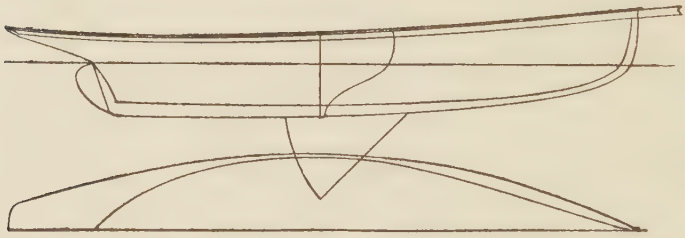
by Cary Smith in 1880, of 45 feet 6 inches water-line, 15 feet 5 inches breadth, and 5 feet 3 inches draft. Henry S. Hovey, of Boston and Gloucester, was a cruising yachtsman, the owner of the keel schooner *Fortuna* already mentioned. William Gray, Jr., was a clever amateur designer, who, in 1883, built from his own designs the keel sloop *Huron*, of 53 feet 6 inches water-line, 15 feet 9 inches breadth, and 8 feet draft. William F. Weld, a member of another family famous in shipping and yachting, was the owner of the keel schooner *Gitana*, of 92 feet water-line, designed and built for him by D. J. Lawlor at East Boston in 1882, and had then cruised abroad in her. Augustus Hemenway, after sailing as a young man in the Herreshoff cat-boat of the time, ordered, in 1882, the keel cutter *Beetle*, of 27 feet water-line and 7 feet breadth and draft, from D. J. Lawlor. J. M. Sears was also one of a family of yachtsmen, owning many yachts.

Several causes led to the formation of this syndicate, a patriotic desire to aid in the defence of the Cup, a similar feeling in respect to the due representation of the Eastern Yacht Club and of Boston in an international event, and a desire to help Mr. Burgess, a personal friend of all the

members. Taken in all its aspects, the attempt was a bold one. On the one hand was the New York Yacht Club, with all its resources, — one yacht, by the leading designer, being already ordered and others being under discussion. On the other hand were the two invading cutters, one just fresh from a successful season of racing and the other presumably an improvement on her. In spite of the confidence of his friends, the ability of Mr. Burgess was as yet untried, and Boston builders had of necessity confined their practice to small yachts. To design and build a racing yacht of much greater size than any single-sticker then afloat, was an undertaking of no small magnitude.

In the first step, the selection of the type, the eastern syndicate was at an advantage as compared with the New York Yacht Club. The latter was in a measure committed to the centre-board sloop, and under existing conditions a radical departure in design was not to be expected. The Boston men, however, were accustomed to keel craft, Mr. Burgess was thoroughly familiar with the modern cutter, and with much at stake, a defeat in an entirely new line of experiment could be no more serious than if the old conventional lines

were followed. The actual management of the affairs of the syndicate was intrusted to General Paine, Mr. J. Malcolm Forbes, and Mr. Gray, with Mr. Burgess, and after consideration they determined to discard all tradition and conventional usage, and to design such a yacht as seemed best suited in the light of the knowledge of the day to meet the immediate end in view. The type



Puritan.

selected was the "compromise cutter" with a centre-board and lead keel.

Puritan, as she was christened on her launching, May 26, 1885, was 94 feet over all, 81 feet $1\frac{1}{2}$ inches on the water-line as finally measured, 22 feet 7 inches in breadth, and 8 feet 8 inches in draft to bottom of keel, her centre-board increasing the draft to about 20 feet. The sheer plan was that of the cutter, with plumb stem, circular sheer, and fairly high freeboard and bulwarks, and

the cutter counter of the day. Her breadth was taken from the sloop, though moderate, and her depth and draft were considerably greater than the old sloops' but less than the cutters'. Outside of the hull proper there was a clearly defined keel some two feet deep, containing forty-eight tons of lead, — the slot for the centre-board being cut through this keel. The greatest draft was at the stern-post, which had more rake than the old sloop but much less than the deep cutters. The keel rounded up gradually, being well cut away at the forefoot. The section was of S form, with a distinct bilge and a strong hollow to the floor about the garboards; it had nothing in common with the cutter of the day, but was more like such British yachts as *Florinda* and *Rose of Devon*, built about 1870. It is probable that, as being nearest in size to the new boat, the schooner *Halcyon* was drawn upon for such data as she could be made to furnish; but there is little in common between her model and that of *Puritan*.

The rig was a compromise throughout; while the bowsprit was not fitted to house in bad weather, and the mainsail was laced along its foot to the boom, — two features directly at variance with cutter practice, — the sail plan was

lower and longer on the foot than in the sloops, the gaff was longer and the hoist shorter, there was a long topmast and a very large club topsail, and the head-sails were divided into jib and staysail. In mechanical details the cutter was followed very closely.

The hull was of wood, built by G. Lawley & Son, at South Boston, there being no special attempt at lightness but the general construction being much more thorough than in the average sloop. The sails were made in Boston, by J. H. McManus & Son. The sail area as measured by the New York Yacht Club rule was 7982 square feet.

The news of a Boston aspirant was received with something of scorn by New York yachtsmen, as reflected in some contemptuous utterances in the New York press about "brick sloops" and "bean boats" that might better stay east of Cape Cod; but in her maiden race, the Eastern Yacht Club regatta on June 30, she easily led the fleet, of which the *America* was the last, beating the latter by about an hour. The preliminary trials of the New York representative, *Priscilla*, were less promising, but still it was confidently expected that she

would make quick work of *Puritan* in their first meeting on the New York Yacht Club cruise, as well as in the trial races planned to follow. So far from this being the case, the first meeting of the two — off Newport on August 3, the Goelet cup race sailed in a fresh southeast breeze — resulted in a decisive victory for *Puritan*, by over ten minutes, corrected time.

After the cruise, on which *Puritan* won two more races to one of *Priscilla's*, they returned to New York, and the latter had her mast unshipped and shortened five feet, with other alterations.

The trial races were sailed in the latter part of August, the 70-footers *Bedouin* and *Gracie* entering with *Puritan* and *Priscilla*. The results of three separate races showed *Puritan* to be decidedly faster than *Priscilla*, while both were from a quarter to a half hour faster than the old sloop and cutter.

Early in the season it was announced that *Galatea* would be unable to cross before the following year, but on July 16 *Genesta* arrived at New York after a voyage of twenty-four days, sailing alone under jury rig with no convoying

steamer. Her owner, Sir Richard Sutton, was a young English yachtsman who in 1882 inherited the schooner *Elmina*, 335 tons, from his father, Sir Frederick Sutton, and in 1884 built and raced *Genesta*. As was proved in the course of his visit, he was a thorough sportsman and a keen yachtsman, but with little racing experience the responsibility for the successful issue of the races devolved on the skipper and designer.

The first race was set for September 7, 1885, but there was no wind; the second race was started on the following day off the Sandy Hook light-ship in a very light wind. The course was twenty miles to windward, and as *Genesta* came for the line on starboard tack she was fouled by *Puritan* on port tack, the bowsprit of the challenger being carried away short at the gammon iron. The regatta committee, Messrs. Tams, Stebbins, and Montant, at once disqualified *Puritan* and gave *Genesta* the option of starting and of being awarded one leg for the cup, provided she finished within the time limit of seven hours for the 40-mile course. Sir Richard Sutton very promptly declared that he had come here to sail races

and not to take them by default, and that he would prefer to make repairs and start anew at a later date. The Puritan party made all possible apologies to the club and to Sir Richard for what was purely an accident, though under the conditions almost an inexcusable one, and the incident closed with no ill feeling.

After two postponements for lack of wind the first race was sailed, over the inside course, on September 14 in a light breeze, *Puritan* winning by over sixteen minutes, corrected time. The second race followed two days later, the course being twenty miles to leeward and return from the Scotland light-ship. The start was made before a light breeze that freshened on the run out from northwest; crossing in the lead, *Genesta* gained 1 minute 21 seconds on the run. Shortly after they turned the outer mark the wind freshened to about thirty miles. *Puritan* housed her topmast, but Captain Carter, with a poor judgment in marked contrast to his other work in this country, persisted in carrying his topmast on end and a jib-headed topsail set, though the sail was not drawing and the yacht would have gone faster with topmast housed. After one of the most exciting fights

and closest finishes ever seen in a Cup race, *Puritan* won by 1 minute 38 seconds, corrected time. No small amount of the credit for *Puritan's* good work through the season was due to her skipper, Captain Aubrey Crocker, of Cape Cod, for many years skipper of *Shadow*.

The challenge of *Galatea* was postponed until 1886, in the meanwhile two more yachts being built to meet her. The Boston yachtsmen, very properly elated by their victory, did not propose to lose their laurels at once, and Mr. Burgess was commissioned by General Paine to design for him as sole owner an enlarged and improved *Puritan — Mayflower* by name. She was built by Lawley & Son during the winter, of the same general construction as *Puritan*. While following the latter's model, she was larger throughout, her over-all length being 100 feet, water-line 85 feet 6 inches, breadth 23 feet 6 inches, draft 9 feet 10 inches. Her lead keel weighed 37 tons, with 11 tons stowed inside, and her draft with board down was over 20 feet.

New York was also in the field with a new yacht, *Atlantic*, modelled by Philip Ellsworth and built by John Mumm, at South Brooklyn,

for a syndicate composed of members of the Atlantic Yacht Club. In the previous year there had been more or less rambling discussion as to the possibilities of the schooner *Grayling* if rigged as a sloop, with some talk of a new Ellsworth model to meet *Priscilla* and *Puritan*, but nothing came of either plan. As the whole interest in yachting was now centred in the "big sloops," as they were called, the plan of an Ellsworth boat was revived and put into execution.

Had the original plan been carried out in 1885, it is probable that the yacht would have been like *Grayling* wide and shoal, with all inside ballast and the old sloop rig; the success of *Puritan*, however, had already worked such a change of ideas among all classes of yachtsmen that the lead keel was considered indispensable. *Atlantic* was a comparatively deep yacht, drawing 9 feet 3 inches on a water-line of 83 feet, and with 33 tons of outside lead and a mixed rig, part sloop and part cutter. As a combination of old and new ideas she was not successful, and after a brief career as a sloop she was converted to a schooner and used many years for cruising.

Mayflower, in her early trials, was less successful than *Puritan*, showing a lack of stability, but this was partly remedied by transferring some of her inside ballast to the keel. *Priscilla*, under the ownership of Commodore A. Cass Canfield, of the Seawanhaka Corinthian Yacht Club, was altered and raced with the other three through the season, finishing with two trial races in August. These were both won by *Mayflower*, and she was selected to defend the Cup.

The challenger, *Galatea*, was owned by Lieutenant William Henn, R.N., a native of Dublin, who entered the Royal Navy as a boy of thirteen in 1860, serving until 1875, when he was retired at his own request, devoting his time mainly to yachting. Mrs. Henn, who prior to her marriage did a great deal of yachting with her brother, accompanied him in all his cruises, and their yawl *Gertrude* was for years their home, either in the Mediterranean or British waters. While *Galatea* was designed and built especially for the challenge for the America Cup, and was in type and dimensions the racing cutter of the period, she was fitted in every way as the permanent home of her owners. Her skipper, Dan Bradford, had been in charge of the old *Gertrude*, and was

more of a cruising than a racing man, though a good yacht sailor. The voyage across the Atlantic was treated as a pleasure cruise, Lieutenant Henn and his wife being on board and taking a full month for the trip. The yacht was under jury rig, with short bowsprit, topmast, and boom, but carried her racing mast.

The first race was sailed on September 7, over the inside course, and in very light weather, resulting in an easy victory for *Mayflower*, by twelve minutes. A second trial two days later failed for lack of wind, and the second and last race was sailed on September 11, partly a drifting match in a very light breeze, *Mayflower* winning by half an hour.

Though *Galatea* was outclassed by *Mayflower* in all weathers, the races were most unsatisfactory, the weather greatly favoring the home boat. Lieutenant Henn issued a challenge to all American yachts to race around the Bermudas and back, which of course was not accepted, and later he made a private match with General Paine, between *Galatea* and *Mayflower*, to be sailed off Marblehead in a breeze; but after waiting for ten days without wind, the latter laid up and the match was never sailed. In the following spring

he visited Marblehead and started *Galatea* against *Mayflower* in the annual regatta of the Eastern Yacht Club, sailed in a strong breeze, and on being badly beaten was perfectly satisfied, having had the trial which he wished in *Galatea's* weather. As a sportsman and yachtsman he made many friends in this country, and his death a few years later was widely regretted.

The building of *Puritan* marks the end of a very important era in American yachting, begun some half-dozen years before by the introduction of the British cutter. Her advent marked the passing of the old centre-board sloop and of the rule-o'-thumb modeller, and the general recognition of a new type, far abler, safer, and faster than the old, and of the professional yacht designer. From a technical standpoint she embodied nothing more than such a compromise model as *Valkyr*, but the magnitude of her victory over such a yacht as *Genesta* in an international contest served of itself to make the type prominent and popular. As an amateur and a newcomer, winning from experienced professionals, Mr. Burgess became instantly famous from one end of the country to the other; his fame extending far outside the domain of yachting.

Year by year from the time of the *Madge* races it became more and more evident that the old centre-board sloop was hopelessly wrong in proportions, model, construction, ballasting, and rig; but, in spite of this, the majority of American yachtsmen were still unwilling to admit that British ideas were right. After her final victory over *Genesta*, *Puritan* was proclaimed to be not British, but Boston, — the perfect embodiment of purely American ideas. History was ransacked to prove that depth of hull, outside keel, and outside ballast were all American institutions from the days of *Gimcrack* and *America*. The result of this curious change of course was most beneficial in the immediate demand for a vastly better type of yacht.

The effect on British yachting was no less powerful and beneficial. The defeat of *Genesta*, followed by that of *Galatea*, led to the abolition of the tonnage rule which had hampered yacht designing from its infancy, and the enactment of a rule based on length of water-line and sail area, to take effect in 1887 and to run for at least seven years. With the tax on breadth and the false measurement of depth abolished, British yachting entered on a period of activity and prosperity.

CHAPTER XII

THISTLE AND THE "NEW DEED OF GIFT"

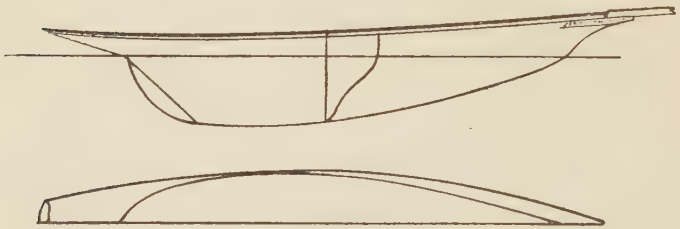
Closely following on the defeat of *Galatea*, the Royal Clyde Yacht Club of Glasgow held a meeting and decided to challenge for the Cup. Under the terms of the Second Deed of Gift no challenger was permitted to give more than seven months' notice, but as this was to the serious disadvantage of both sides, the matter was approached in a plain and sensible manner by a letter from William York, secretary of the Royal Clyde Yacht Club, to John H. Bird, secretary of the New York Yacht Club, stating that the former club desired to arrange a match for the Cup, to be sailed in September, 1887; but that as it was prevented from issuing a formal challenge more than seven months in advance of the date of the first race, it was desirous of making all arrangements in the meanwhile, and of forwarding the formal challenge in proper season. The letter also stated that the challenging club would build a yacht, of about the size of *Mayflower*, if

the New York Yacht Club preferred to race that yacht, but suggesting that a smaller class, of 65 to 75 feet water-line, would be as satisfactory for racing and less costly.

The whole tenor of this letter was in perfect accord with the spirit and letter of the original Deed of Gift, inviting a "mutual agreement" for a "friendly competition." That it was not in accord with one of the provisions of the second deed was solely because that peculiar document positively prohibited a challenger from giving such ample notice as could only be to the manifest advantage of the defender in giving ample time for building. This letter was acknowledged with the most scant courtesy; and when laid before the New York Yacht Club a resolution was passed to send to the Royal Clyde Yacht Club a copy of the second deed, with a notice that when a challenge came "in proper form," it would receive due consideration. In spite of this frigid reception the club persisted in its determination to challenge, and further efforts were made to come to an agreement as to the general size of the competing yachts, in order that neither party might outbuild the other. All efforts in this direction failed, the response being as before, that when a

challenge in due form was received, it would be acted on. Under these circumstances the challengers determined to adhere to the letter of the existing deed, and further, to keep to themselves all particulars of their yacht until compelled to disclose them.

The order for the design was placed with George L. Watson, a member of the club and the designer

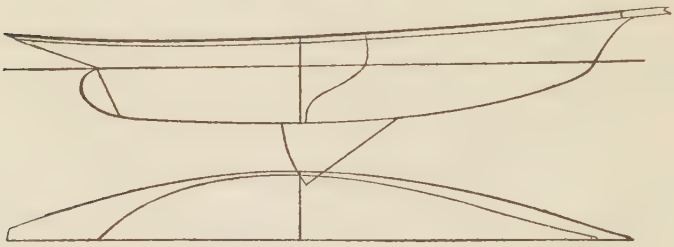


Thistle.

of *Madge* and *Marjorie*, whose services were given freely to the syndicate, the builders being D. and W. Henderson of Glasgow. The first preparation for the work was the building of a tightly enclosed shed, with locked doors, to which no one was admitted but the designer and those immediately connected with the construction of the yacht. Here was built during the winter of 1886–1887 the widest cutter seen for many years in British waters, her breadth being 20 feet 4

inches on a water-line of 85 feet, as originally designed. With a clipper bow in place of the plumb stem of the older cutters, her over-all length was 108 feet 6 inches. Although a keel boat, with no centre-board, her draft was but 13 feet, and added to this her forefoot was well cut away and the bottom of her keel rounded off to give a minimum of wetted surface for work in light weather. While such a yacht as *Genesta*, with a deep forefoot giving a great area of lateral plane, and a flat wall side, had something to hold her in windward work, there was nothing about the new boat to prevent her from sliding to leeward. The fact seems to be that, as in the narrow cutters, it was necessary to carry the ballast in a very long lead keel, in order to obtain power to carry sail. This length of keel and flat side relieved the designer from any serious consideration of the question of lateral resistance. When the added breadth made it possible to cut up the keel and at the same time gave a round instead of a flat side, some addition to the area of lateral plane was necessary; but in the many considerations involved in the production of a new type for a special and important purpose the designer overlooked this, just as happened years later in the case of *Colonia*.

The new yacht, *Thistle*, was launched on April 26, the secret of her dimensions being well kept, in spite of many attempts to fathom it, until it was in part disclosed by the formal challenge, sent to New York in March. Long before this General Paine had announced his readiness to defend the Cup with a new Burgess



Volunteer.

yacht, and the matter by general consent had been left to him as the best fitted for the work. The making of the design was postponed until the arrival of the challenge, in which the water-line of *Thistle* was given as 85 feet, when a length of 85 feet 10 inches was decided on as the water-line of the new defender. She also was given a clipper bow, making her over-all length 106 feet 3 inches; her breadth was 23 feet 2 inches and draft 10 feet, exclusive of the centre-board, which drew about 21 feet. The hull was

of steel, built by the Pusey & Jones Company, at Wilmington, Delaware; and as the work was necessarily hurried, the plating was rough in appearance, especially when compared side by side with the perfect workmanship of *Thistle*. The general form was a development from *Puritan* and *Mayflower*, narrower, deeper, of greater displacement (130 tons) and with 55 tons of lead in the trough keel; the sail area being 9271 square feet, or 3000 square feet in excess of *Thistle*. Unlike the two older boats, her bowsprit was fitted to house, as in the English cutters, for bad weather.

In spite of the reason for it, the secrecy attending the building of *Thistle* gave rise to much ill-feeling in America, and this was greatly increased when, upon measurement prior to the first race, her load water-line proved to be 86.40 feet, or some seventeen inches in excess of that given in the challenge. There was no evidence that, like many American yachts, she had not gone below her designed lines through an error on the part of her designer, — a matter of such common occurrence as to call for the frequent enactment or extension of exemption clauses in the rules of all yacht clubs to admit to fixed classes yachts whose

actual dimensions exceeded those of their designs. As she paid for the excess in the time allowance, no injustice was done to the defending boat, but for a time there was a prospect of a break in all relations. This was finally averted and the races sailed, one over the club course and one outside.

Volunteer was sailed by Captain "Hank" Haff, one of the best of American skippers, while *Thistle* was sailed by Captain John Barr, a Scotch skipper already well known here through his successful handling of the cutter *Clara*. The inside course was sailed in a light breeze, *Volunteer* winning by nearly twenty minutes. The second race was sailed over a 20-mile course to windward from the Scotland light-ship, in a strong breeze and sea, *Volunteer* leading by nearly a quarter of an hour at the weather mark, but losing three minutes to *Thistle* on the run in.

When the Royal Clyde party reached New York at the end of the last race, a note was sent by messenger to the New York Yacht Club stating that a new challenge would be issued as soon as it could be formally done, the challenging yacht to be of 70 feet water-line. Three days after this, at a special meeting of the club held to arrange for a testimonial to General Paine and

other similar matters, a motion was introduced to the effect that a special committee of the club be appointed with power to return the America Cup to Mr. Schuyler and to receive it from him upon new conditions. This was done, an entirely new deed of gift being drawn up by the committee and accepted by it on behalf of the club. When finally submitted to the club at a meeting on October 27, the chairman was obliged to decide (upon the objection of C. Smith Lee) that the club as a body could not vote on the question, the special committee, by virtue of the power intrusted to it, having already finally accepted for the club what has since been known as the "New Deed of Gift."

One of many peculiar features of this document is its quasi-legal form and great length, as compared with the brief and simple paper in which the original donors of the Cup recorded their intentions as to its future. On account of this length it is desirable to summarize the leading points, the principal one being that in order to obtain a match a challenging club must give ten months' notice, including the length on the water-line, the breadth at the water-line and the extreme breadth, and the draft of water. The

competing vessels were limited to not less than 65 feet nor more than 90 feet on the water-line for single-stick vessels, the corresponding limits for schooners being 80 feet and 115 feet. It was provided that no restrictions should be placed upon centre-boards, nor should they be considered a part of the vessel for purposes of measurement. The number of races which a challenger might demand by right was named as three, all to be sailed over ocean courses with at least twenty-two feet depth of water. Upon the publication of this document the Royal Clyde challenge was formally withdrawn and the leading British clubs joined with yachtsmen, both foreign and American, in denouncing the unfair conditions imposed on all future challengers.

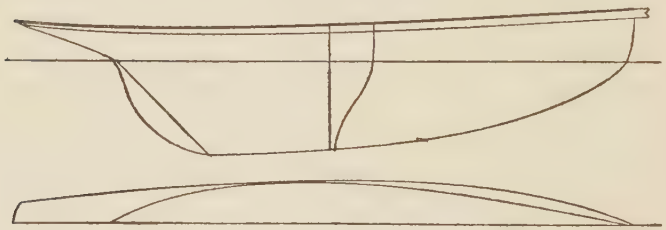
From a practical standpoint the demand for dimensions was an impossibility. The designer of a challenger would be compelled to complete his design in all its minute details almost a year in advance of the first race in order to place the principal dimensions in the hands of the New York Yacht Club ten months in advance. After these dimensions were thus on record he could in no way depart from them, either in lengthening or shortening the water-

line to obtain the best trim, or in adding ballast to the keel, as was done in the case of *Mayflower*. Meanwhile, with the challenger thus hampered in every way, the defender had ten months in which to study his dimensions with a view to outbuilding. This ended, as foretold at the time, all further racing for the Cup. In 1888 the club in part receded from its original position in offering to accept a challenge upon the same conditions as those governing the matches of 1885 and 1886, provided the "new deed" were recognized as legal; but no foreign club came forward to accept the offer.

CHAPTER XIII

CLARA, MINERVA, AND THE FORTY-FOOT CLASS

Just at the time in August, 1885, when the yachting world of New York and Boston was on the *qui vive* over the first meeting of *Puritan* and *Priscilla* at Newport, there sailed into New York late one night a little cutter, thirty-



Clara.

Typical narrow cutter, 1884.

nine days out from England. She was brought out from the Thames by one of the crews which make a regular business of taking British yachts to distant foreign ports. Her skipper was unfamiliar with New York Harbor, and before he fully realized that his long cruise was over he had run far above all the yacht anchor-

ages and well up the Hudson River. One of the crew, a boy about out of his 'teens, was Charles Barr, a brother of Captain John Barr, the skipper who, coming out by steamer, was to race the yacht on this side.

Clara was designed by Will Fife, Jr., and built under his management by the Culzean Ship-building Company, on the Clyde, in 1884, for J. George Clark, a Scotch yachtsman. She was designed for the 20-ton class, her dimensions being: length over all, 62 feet 2 inches; load water-line, 53 feet; breadth, 9 feet 1 inch; draft, 9 feet 10 inches. She was of composite construction, steel frames and wood stem, stern-post, keel, and planking, with all her ballast on the keel. In her first season she proved very successful, and also in the early part of 1885; then she was sold to Charles Sweet, a member of the Royal Thames Yacht Club, a London barrister who was visiting New York for an indefinite stay in connection with some legal business. In this he was associated with Charles H. Tweed, a New York lawyer residing at Beverly, Massachusetts, in summer, a lover of yachting but not a racing man. The skipper selected by Mr. Sweet was Captain John Barr,

a Scotchman from the Clyde, where he stood very high as a bold, cautious, and skilful racing man.

After refitting, *Clara* joined the fleet of the Eastern Yacht Club at Newport and sailed with it to New London, being third yacht out of a fleet of thirteen, all larger than she. The fleet continued to New York to witness the *Genesta-Puritan* match, after which there were open races. In the race for the Bennett-Douglas cups, on September 21, *Clara* won a sweepstakes of $600 from the cutter *Isis* and the compromise sloops *Daphne* and *Athlon*, all new yachts of her class. This was the auspicious beginning of a remarkable career, *Clara*, under the ownership of Messrs. Sweet and Tweed and the captaincy of John Barr, defeating everything in her class, new and old, until she was looked upon as invincible. In 1886 the compromise cutter *Cinderella*, designed by Cary Smith, was built to meet her, but proved unable to defeat her; and in the following year the Ellsworth sloop *Anaconda*, built for the same purpose, fared no better. *Clara* was of the most extreme type of narrow cutter, her water-line being almost six times her breadth. She was an excellent boat

in all weathers, and the handling of Captain Barr was well worthy of Mr. Fife's design.

The effect of the Cup races of 1885, 1886, and 1887 was to stimulate yachting in all parts of the country. Clubs were formed in remote localities, the established clubs grew in numbers and wealth, and many new clubs sprang up beside them on the coast. Mr. Burgess was almost swamped with orders for all classes of vessels, small and large yachts, fishermen and steamers; and other designers shared in the general prosperity. Class racing was at its height, the now large fleet being divided in a fairly systematic manner into many classes with fixed limits of water-line, to which yachts were specially designed. The 90-foot schooner class included such noted yachts as *Montauk*, *Grayling*, the new Burgess boats *Sachem* and *Merlin*, and the imported *Miranda;* the smaller schooners, prominent among which was *Iroquois*, made another good class. The Cup class included *Puritan*, *Mayflower*, *Volunteer*, *Atlantic*, and *Priscilla*, these by degrees being converted to the schooner rig. In the 70-foot class were *Bedouin*, *Gracie*, *Fanny*, *Stranger*, *Thetis*, *Huron*, and *Mischief;* and then came the 53-foot class, with *Clara*,

Athlon, *Daphne*, *Cinderella*, *Anaconda*, and some of the old sloops remodelled in hull and with new rigs patterned after the cutter.

After completing the design of *Volunteer* early in 1887, Mr. Burgess designed among other yachts a "keel sloop," so called, for Charles Francis Adams, 3d, and his brother, George C. Adams, two young yachtsmen who had grown up in cat-boats about Quincy, afterward going into small keel sloops for the racing about Massachusetts Bay. *Papoose* was in effect a keel cutter, of similar type to the Itchen Length Class boats then in use about the Solent, but refined in form and rig. She was 44 feet over all, 36 feet on the water-line, 12 feet 6 inches in breadth, and 7 feet 6 inches in draft, with 10 tons of lead on her keel. With a plumb stem and the sheer and counter of a cutter, she was a smart-looking craft; and though built to no class, she raced during the season with the old yachts of about her length, and proved very fast.

About the same time there was built at City Island, for P. S. Pearsall of New York, a compromise cutter of 40 feet water-line, with lead keel and centre-board, designed by Cary Smith, and named *Banshee*. The success of *Papoose* in the

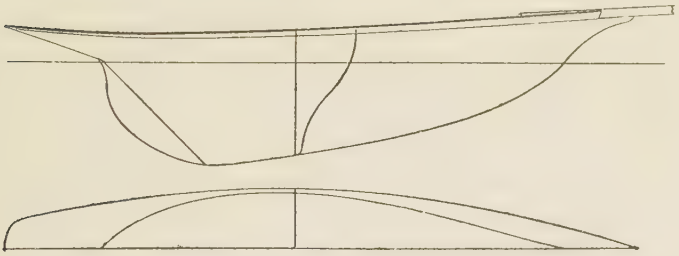
East against such well-known boats as *Shadow* and her fellows led to a visit to Long Island Sound and a series of races with *Banshee*, in which the keel boat was the winner. Coming at a time when the excitement over the international match was still alive, these races attracted much attention and resulted in the establishment of a new class of 40 feet water-line. The Adams brothers sold *Papoose* and ordered a similar cutter of 40 feet water-line, *Babboon*, to replace her; F. W. Flint of New York ordered of Mr. Burgess a centre-board 40, *Nymph;* Augustus Hemenway ordered the centre-board *Chiquita;* and James Means, the keel boat *Xara.* The racing of these boats in 1888 led to a number of orders for the following year. Mr. Burgess turned out *Verena*, *Lotowana*, *Awa*, *Mariquita*, *Tomahawk*, *Chispa*, *Choctaw*, and *Ventura;* Cary Smith designed the centre-board *Gorilla;* William Gardner, a young American designer educated in England, found his first order in *Liris;* and A. G. McVey, a Boston amateur, designed *Helen and Alice.* At the same time a smaller class, of 30 feet water-line, had found almost as much favor with yachtsmen, especially about Boston.

Early in 1888 Charles H. Tweed, — one of the

owners of *Clara*, who had in 1886 imported the narrow Watson 5-tonner *Shona*, placing Charles Barr in charge with John Barr, Jr., as "crew,"— placed an order with Will Fife, Jr., for a cutter of 40 feet water-line, to be used for pleasure sailing about Marblehead and Beverly, the details being left to the designer with no stipulations, save that she was to be a safe and comfortable little boat. When she neared completion in the summer, Captain Charles Barr was sent across to Fairlie. She was launched with the name of *Minerva*, and under a small rig Captain Barr started across the Atlantic. She made the voyage in safety, and during the fall her owner used her about Marblehead. Early in the spring of 1889 she was fitted out by Captain Barr and sailed to New York, Mr. Tweed being a member of the Corinthian Yacht Club, and, as much of his time was spent in that city, intending to use her about the bay and Sound.

The season of 1889 opened with a large and fine fleet of 40-footers, as well as with a fine representation in the 70-foot class, including *Titania* and *Katrina*, — the latter a new steel centre-board cutter designed by Cary Smith. The 40-footers were wide, powerful boats, of great

draft, and well ballasted and sparred. The largest was *Liris*, designed by William Gardner for C. W. Wetmore, Colgate Hoyt, and Samuel Mather, of the Seawanhaka Corinthian Yacht Club; a keel boat of 57 feet over all, 13 feet 6 inches breadth, and 9 feet 9 inches draft, with a lightly constructed hull, steel frames, and double



Minerva.

Wide cutter, 1888.

planking, the outer skin of mahogany. Her lead keel weighed 16 tons, and her sail area measured 3603 square feet; her spars were all hollow, and she had imported canvas, the light sails being of the then new "Union silk," used two years before by *Thistle*. She was manned by a Corinthian crew, and in most of her races was steered by a Corinthian. The Burgess 40-footers were of the same general type but of less draft and power,

with from 3100 to 3300 square feet of sail; they were heavier in construction, with single planking, mostly on wooden frames, and solid spars. The Cary Smith boat, *Gorilla*, was of the deep centre-board type, 14 feet 3 inches wide, and very powerful. The owners of the class included such yachtsmen as E. D. Morgan, Royal Phelps Carroll, and August Belmont, prominent as owners of much larger racing yachts.

After starting bravely in the first race, the annual regatta of the New York Yacht Club, on June 13, *Liris* lost her new hollow mast before she was outside Sandy Hook, and reluctantly took a tow for home, leaving her competitors going like steamboats for the light-ship in a fresh southwest breeze. In discussing their hard luck, — as the yacht must inevitably miss the other races of the week while awaiting a new spar, — it was suggested by E. M. Padelford, one of her Corinthian crew, that Mr. Tweed might be willing to lend *Minerva* for a race, he being deputized by the others to arrange the matter if possible. Mr. Tweed consented very readily, and two days later, in the Seawanhaka race, *Minerva* started, with J. F. Lovejoy, a Corinthian, at the stick, and a Corinthian crew with the excep-

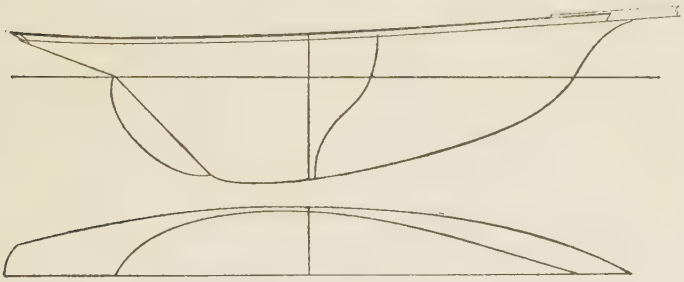
tion of Captain Tom Sloane, the skipper of *Liris*. The weather was variable, with calms mixed in with a squall, but it seemed to make little difference to *Minerva*. She went ahead, with or without wind, and won easily. From this on she was raced regularly through the season, in the hands of Captain Charles Barr, winning with a sad monotony, until the cry, almost pathetic, went up from the press and from yachtsmen, for "anything to stop *Minerva*."

The vast difference between her and her American rivals is shown in the sail area, a total of but 2700 square feet, or 75 per cent of that of *Liris*. Her length over all was 54 feet, her breadth was 10 feet 4 inches, and draft 9 feet. Her form was beautifully proportioned, with fair, easy lines, and she had but a moderate area of lateral plane, almost triangular in outline, as compared with the deep, straight keels of the Burgess boats; and yet she went to windward in a wonderful way.

The summer of 1889 was spent by the Adams brothers in British waters, where they sailed on the leading yachts, including the crack 10-rater, Fife's *Yvonne*, and made themselves thoroughly familiar with British yachts and British racing

methods. On their return they placed an order with Mr. Burgess for a new boat that should really "stop *Minerva*." The result was *Gossoon*, a keel boat, of less breadth, fuller section below, and more displacement than the older boats, and with a more moderate sail plan. The construction, which was considered very light at the time, included a number of steel frames in addition to the usual wooden ones, the planking being of wood. Two other new Burgess boats were added to the class, *Ventura* and *Moccasin*,—both deep centre-board cutters, of different proportions. These three, with *Liris*, *Mariquita*, and the older boats, made a magnificent fleet, many of them being raced persistently throughout the season of 1890. The result was to the credit of the little Scotch cutter; at the end of the season she tied *Gossoon*, the leading American boat, each having won five out of ten races in which they met, the result of one race being in dispute, owing to a question as to a measurement which was never verified. Though it is the common belief that *Gossoon* really did what she was built for in defeating *Minerva*, the most that can fairly be said is that the final result was a draw between the new and the old boat.

The 40-foot class must always stand as one of the best racing classes in American yachting. It numbered in all twenty-one yachts, all but five being designed by Mr. Burgess, of the same water-line length, in addition to such old boats as elected to race with the class. All of them were stanch, strongly built craft, of moderate cost



Gossoon.
Typical Burgess cutter, 1888-1890.

(*Minerva* cost but $5000); they were used for cruising when not busy with the races; and they were ultimately sold at good figures. With the exception of the steel *Tomahawk*, all are afloat and in use at the present time. They brought into racing many good yachtsmen, and they proved a good school for racing skippers. The 30-foot class was a miniature of the other, giving good racing for several seasons in an excellent type of yacht.

It is hard to say now why the 40-foot class was abandoned at the time when the racing was at its height; but after the end of the season of 1890 the idea of a new and larger class was mooted in the daily papers, and was taken up by some of those who had failed in their efforts to head the old class. The new class, of 46 feet water-line, offered a larger and more costly boat in every way, with little more accommodation and in no way giving better sport; but it soon found supporters, and orders were placed with both Burgess and Fife.

CHAPTER XIV

HERRESHOFF AND *GLORIANA*

Gloriana.

THE changes in the form of yachts have been so varied and contradictory that it is almost impossible to ascribe them to any sound technical foundation on the accepted principles of naval architecture; and it would appear that, from the first, builders and even designers have followed very largely their own ideas, influenced by tradition, measurement rules, and local conditions. The leading characteristic of the first yachts was the "cod's head

and mackerel's tail " form, with blunt bows and fine run, — a model which had no scientific basis and which was entirely wrong. The revolution brought about by George Steers, Scott Russell, and the designers of *Mosquito* produced a model in every way adapted for speed and for sea-going work, the yachts of the early fifties standing to-day as brilliant marks in the history of yacht designing. It was not long, however, before these models were cast aside, in England for the narrow cutter, and in America for the wide sloop, — flat, unshapely things whose bulging middles made necessary the most extreme form of hollow bow. Such forms were dangerous in smooth water from their lack of stability, and they were far worse in a seaway, the hollow bows lacking buoyancy and going under as soon as the vessel heeled and immersed her full, heavy quarter.

Under the guiding hands of Cary Smith and Burgess, yacht designing was placed upon a new and higher plane and a great revolution was accomplished in form, in both the keel and centre-board types, as shown in *Intrepid*, *Fortuna*, *Papoose*, *Babboon*, *Puritan*, *Iroquois*, *Banshee*, and *Nymph*. In all of these and many sister

boats the general form, while modified in proportions and details according to size and intended use, possessed the same characteristics as that of the *America*, being based, like all of Steers' work, upon thoroughly sound principles of design. In accordance with American ideas the proportion of breadth to length was high, and the proportion of depth to breadth was in some cases low, but taken together the fleet was characterized by seaworthy form and a stanch and strong construction. The general characteristics of these yachts were a liberal amount of displacement disposed according to the wave form theory of John Hyslop; a fairly full midship section with round bilge (in the keel and the deeper centre-board boats this section being of S form); an outside keel into which was built most of the ballast; and a rather fine bow, with a moderate amount of hollow in the forward water-lines of the wider boats, this hollow decreasing in the narrower yachts. In the British yachts of the same period, owing to the extremely limited breadth, designers had, almost as a matter of course, resorted to a full, convex water-line forward.

While the straight, plumb stem was seen on some of the yachts of the sloop era, the fashion

of the day through the seventies was for the "clipper stem," — a small amount of forward overhang, made up almost entirely of false work, deadwood, and ornamentation, and in no essential particular different in effect from the plumb stem. With the advent of the first cutters the plumb stem, either perfectly straight or with a very slight round, came into fashion in this country, being a distinguishing feature of *Mischief*, *Priscilla*, *Puritan*, *Mayflower*, *Papoose*, and their contemporaries, as well as of *Genesta* and *Galatea*.

The "clipper stem," or "fiddle bow," was generally used on schooner yachts in England; but the plumb stem was so nearly universal for all cutters that something of a sensation was created when, in 1880, Robert Hewett, an amateur, brought out the 10-tonner *Buttercup* with a clipper stem, which was soon known as the "Buttercup bow." In making his radical departure from the conventional cutter lines in designing *Thistle*, in 1886, Mr. Watson gave her a clipper stem which was more than a mere ornament, actually carrying out the deck line and the upper portion of the stem. *Volunteer*, designed a little later, had also what was called a clipper stem, but it gave practically no added length on deck. The centre-board cutter

Titania, designed by Burgess in 1887, had a plumb stem; but her classmate *Katrina*, designed by Cary Smith, in 1888, had the same bow as *Thistle*.

After the lead of *Thistle* the clipper stem became common on British cutters, but the Burgess boats were divided between the plumb and the clipper stem, the latter when used being very short and little more than an ornament.

All the new 46-footers designed in the winter of 1890–1891 had this short clipper stem, with a slightly hollow water-line forward and a decided forefoot, though the fore end of the keel was well rockered up.

About the close of the Civil War a small boat-shop was started at Bristol, Rhode Island, by John B. Herreshoff, one of a large family of boys and girls, grandchildren of Frederick Herreshoff, a Prussian engineer, who settled in Rhode Island in 1790. A blindness, apparently hereditary, afflicted several members of the family, and when still a young boy John B. Herreshoff by degrees lost his sight. Living on the beautiful waters at the head of Narragansett Bay, he was already a skilful boat sailor, and in spite of his affliction he continued sailing and racing, his younger brother Nathaniel Greene Herreshoff, born in

1848, going with him and acting as lookout. The loss of sight merely served to develop to a most remarkable degree the other senses, and as a young man John Herreshoff was accustomed to work at the bench, making repairs on his boats; and in time, while his brother was a student of engineering at the Massachusetts Institute of Technology, he started to model and build yachts as a regular business.

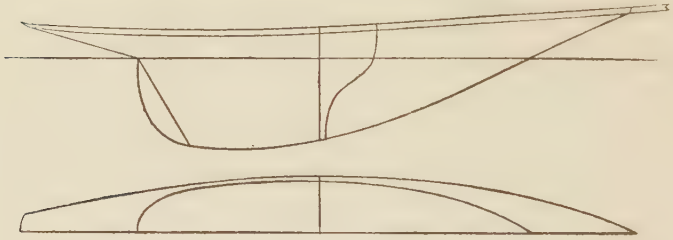
While following the centre-board type, the Herreshoff models were deeper and abler than the New York boats, and of better form throughout; and they soon became famous between Bristol and Boston. Most of the yachtsmen who have been prominent in recent years in Boston yachting were practically cradled in small sloops and cat-boats modelled and built by John B. Herreshoff at this time. After graduation Nathaniel spent several years with the Corliss Engine Works in Providence, having charge of the erection of the large Corliss engine which was a notable feature of the Centennial Exhibition of 1876. About this time the two brothers became interested in steam, and under the name of the Herreshoff Manufacturing Company they turned out the fastest launches of the day and some of the first

torpedo-boats, by degrees working into larger steam yachts. Occasionally a small sailing yacht was built to order, and "Nat" Herreshoff always had a yacht for his own use, but the main effort was concentrated on steam craft. In 1887 the Herreshoff catamaran made its appearance in New York Harbor, showing a wonderful speed, and making the type popular for a few years.

In 1883 Mr. Herreshoff built for himself a sturdy little cruising cutter, *Consuelo*, of 28 feet 6 inches water-line, 8 feet 8 inches breadth, and 5 feet 6 inches draft, with lead keel, rigged as a "cat yawl," and fitted with many curious contrivances of his own invention. Other small experimental keel boats followed from time to time, until in 1890 he produced two that were notable departures from all existing practice. Both of them were derived from a very close study of *Minerva*, but she was only the starting-point for Mr. Herreshoff's original ideas. When the formation of the 46-foot class became a certainty, he submitted to E. D. Morgan, the owner of one of the experimental boats, a design from which was built the noted *Gloriana*.

To the eye, the most notable feature of this yacht, which jumped at once to the top of the

class and held the first place through the season, was the great over-all length and the peculiar forward overhang; but these details were largely superficial. In the furor created by the press over the "*Gloriana* bow," no one took the trouble



Gloriana.

to study, as it deserved, this most remarkable design.

Gloriana was built to race under the "length-and-sail-area" rule then in general use, with a classification by water-line length, and an allowance of time for measurement by water-line and the square root of the sail area, — conditions which induced a large hull on a short measured water-line, with a large sail plan carried by virtue of breadth, draft, and ballast. With a moderate breadth, 13 feet, and a draft of 10 feet 2 inches, the midship section was of the S form, but with more hollow, giving less area, and consequently

less displacement for the dimensions, than in such a yacht as *Minerva*. The fine fore end of the water-line and the forefoot just beneath it that characterized the yachts of the time were boldly cut away, with several good results. The actual measured length was reduced by several feet, the area of wetted surface was also reduced, and the area of water-line plane was increased in proportion to its length, giving great stability whether upright or heeled.

All the early yachts were built with straight keels, from which the stem rose at almost a right angle, the draft at the fore end of the keel being almost as great as at the after end. This "forefoot," as it was called, was considered essential at first, but by degrees it was cut away. It was in evidence in a degree in *Genesta* and *Galatea*, but in *Thistle* and *Minerva* it was inconspicuous, the outline approaching a triangle rather than a rectangle. Mr. Herreshoff decided that this suppression of the forefoot, and the fine wedge-like end of the water-line, could be carried to a much greater extreme with a marked advantage in reducing the measured length, and no disadvantage in the blunter form of entrance, provided the work was skilfully executed. As an accidental

feature of this cutting away, rather than as an essential point of design, the forward overhang was for the time of extraordinary length.

Apart from its special features, the whole form of the boat betrayed the skill of which additional evidence has since been given in abundance. All the fore-and-aft lines, the diagonals and dividing lines, were fair and true, with no hollows, following the practice of George Steers; and the whole form was so moulded that when heeling in smooth water or pitching and scending in a sea, its general character remained unchanged. The different level lines of the bow, below and above water, had approximately the same angle of entrance, in place of being exceedingly fine below, and very full at the deck.

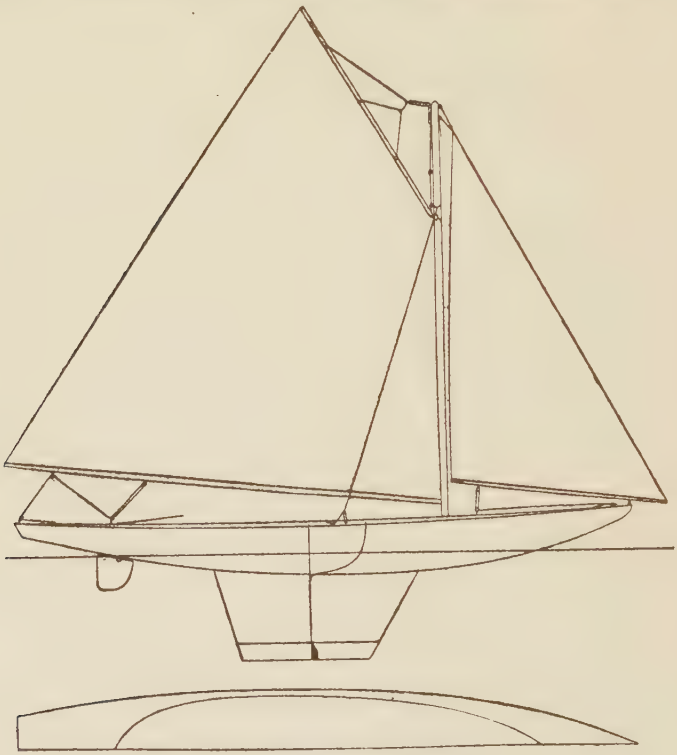
An important factor in *Gloriana's* success was her construction. The new Burgess 46-footers, intended to be much lighter in proportion than the 40-footers, proved failures in the matter of construction, being heavy and not over strong, with a single skin of yellow pine, caulked, and steel frames. *Gloriana* was built after a semi-composite system perfected in the Herreshoff steam yachts years before, with steel frames and planking in two thicknesses, with no caulking,

each outer strake being carefully fitted and laid in white lead, making a surface almost without seams. The sail plan was large, measuring 4100 square feet, or 100 feet more than *Mischief*, of 61 feet water-line; and it was cleverly planned, while the mechanical points of the rig were carefully worked out.

From keel to truck *Gloriana* was a masterpiece of original thought, careful selection of elements, and attention to minute detail; and the wisdom and perspicacity of both practical yachtsmen and of expert yachting writers was never better exemplified than when they one and all refused to see anything to her but the over-all length and the point of the fore overhang. Just as British yachtsmen forty years before had servilely imitated the hollow bow of the *America* and the absurd rake of her masts, the yachtsmen of 1892 set to work to increase the speed of their yachts by means of added length on deck and long pointed bows, overlooking the true essentials.

So far from being exhausted by the production of *Gloriana*, the busy brain of her designer was at work through the summer following; and in the fall of 1891 he launched a small experimental yacht for his own use. *Dilemma*, as she was

aptly named, was practically a wide canoe with long overhangs, her length over all being 38 feet on a water-line of but 26 feet; her breadth was 7



Herreshoff Fin Keel, 1892.

feet, and the draft of the hull a little over a foot. On these dimensions it was possible to obtain the same long, easy lines that characterized *Gloriana*.

The most remarkable feature, however, was the keel, — a rectangular plate of steel, to the lower edge of which were bolted the two halves of a cigar-shaped bulb of lead weighing two tons. This "fin keel," as it was called, was secured to the oak keel of the boat by means of two angle irons and bolts. This new craft carried to a much greater extreme one of the essential features of *Gloriana*, — breadth as an element of power, depth as another element of power in the length of lever through which the lead keel acted, and with these a small area of midship section. The little craft showed exceptional speed on trial, and from her sprang yachts of all sizes, cruisers and racers, whose number it would be impossible to estimate.

The advent of *Gloriana* created as great an excitement as that of *Puritan*, and her influence on design was ultimately as widespread, affecting both sides of the Atlantic. Before the season's racing was well under way Mr. Burgess was attacked by typhoid fever, the result of continued application to his profession, and he died on July 12, at the age of forty-three. Through his illness he was spared the knowledge of the failure of his new boats, and the advent of Mr. Herreshoff in the field of sailing yachts.

In 1892 a new Herreshoff 46-footer, *Wasp*, was launched for Archibald Rogers, former owner of *Bedouin*, with Captain Charles Barr in command. She was larger and more powerful, with some changes of form, but the same essentials; carefully designed to the limit of existing rules, she not only won in her first seasons, but held a prominent place in racing for a number of years.

In the fall of the same year an order was placed with the Herreshoffs for *Navahoe*, a steel racing cutter of 84 feet water-line, by Royal Phelps Carroll. Following the general plan of *Gloriana*, the fore-and-aft lines were carried out into long overhangs, the length on deck being 123 feet, with a breadth of 23 feet 6 inches and a draft of a little over 12 feet. The hull was of steel, with a steel trunk for the centre-board, and the ballast was all cast in the keel trough. After the first trials of the yacht in the early spring, she was placed on a dry-dock at Providence, and at a heavy expense to her owner this lead was cut out and transferred to the outside of the keel, increasing the draft by over a foot. Later in the season she crossed the Atlantic and raced against the new *Britannia*, *Valkyrie II*, *Satania*, and *Calluna* with rather poor success.

CHAPTER XV

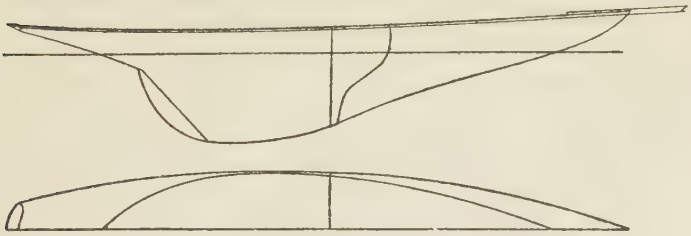
THE DUNRAVEN CHALLENGES

Wyndham Thomas Wyndam Quin, fourth Earl of Dunraven, was born at Adare Abbey, Ireland, in 1841, and educated at Christ Church, Oxford, entering the First Life Guards in 1865. Two years later he acted as war correspondent for the *Daily Telegraph*, of London, during the Abyssinian campaign; and later he did the same work during the Franco-Prussian war. In 1871 he succeeded to the title, and later he served as Under-Secretary for the Colonies under the two administrations of Lord Salisbury. In 1887 he resigned his office, being dissatisfied with the preferment accorded to him, and in the fall of the same year he placed an order for his first yacht, the cutter *Petronilla*, 85 tons, designed by A. Richardson and built by J. G. Fay & Son, at Southampton. She was raced in 1888 with poor success, and in the fall he placed an order with Mr. Watson for a larger cutter, of 70 feet water-line, *Valkyrie I.*

Very early in his yachting career Lord Dunraven cast his eyes upon the America Cup, then practically locked up by the New Deed of Gift and the resolve of British clubs that they would not challenge under it. Early in 1889 he began negotiations through the Royal Yacht Squadron for a match, and the matter progressed so far that the New York Yacht Club offered to make certain terms with him, provided that the Cup, if won, should be held by the Squadron strictly under the new deed. This the Squadron positively refused to accede to, and the subject was dropped for the time.

As the 70-foot class was then at its best, with *Katrina*, *Titania*, and *Shamrock* — the wooden centre-board cutter — all racing, many American yachtsmen favored the idea of a positive acceptance of a challenge from a 70-footer; but Mr. Burgess and others very prominent in yachting insisted that a challenger, no matter how small, should only be met with the largest and fastest yacht which could be put against her, — this being at the time *Volunteer*. After correspondence back and forth at intervals, an agreement was finally reached late in 1892 by which the Royal Yacht Squadron, acting for Lord Dun-

raven, was allowed to challenge, giving only the water-line length of the yacht, in return being granted what had been asked by and denied to each previous challenger with the exception of Mr. Ashbury in 1871,—a series of three out of five races. The subject of the new deed was not directly mentioned, but it was understood by the New York Yacht Club that it was still



Valkyrie II.

in force, and recognized as the only legal statement of the trust; while the Royal Yacht Squadron, on its side, ignored it, and agreed only to hold the Cup, if won, under the actual terms of the match, the challenge naming only the water-line, with a penalty if it were exceeded, and the series including five races on the open sea.

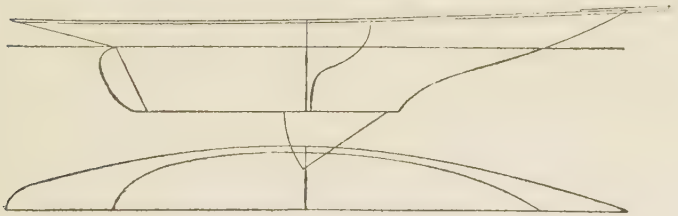
As it was plain that the defence would rely upon a 90-footer, however small the challenger might be, the length of the new yacht ordered of

Mr. Watson, *Valkyrie II*, was given as 85 feet. Apart from the revolution effected by *Gloriana*, *Volunteer* was now out of date, and preparations were made for a new class of Cup defenders. As soon as the details were finally arranged, a syndicate was made up within the New York Yacht Club, including Archibald Rogers, F. W. Vanderbilt, W. K. Vanderbilt, F. Augustus Schermerhorn, J. Pierpont Morgan, and John E. Brooks, and a *carte blanche* order was placed with the Herreshoff Manufacturing Company for a Cup defender of 85 feet water-line, all dimensions and details being left to the builders. The yacht when launched was named *Colonia*, and Captain "Hank" Haff was selected to sail her.

John B. Paine, a son of General Paine and an amateur designer and racing man, also designed a fin keel, *Jubilee*, built of steel by Lawley & Son for General Paine. The successors of Mr. Burgess, Stewart & Binney, organized another syndicate of Boston yachtsmen and built a more extreme fin keel, *Pilgrim*. After the work was well begun on *Colonia* a second New York syndicate was formed, including C. Oliver Iselin, E. D. Morgan, Oliver H. P. Belmont, August Belmont, Cornelius Vanderbilt, Charles R. Flint, Chester

W. Chapin, George C. Clark, Henry Astor Carey, W. Barton Hopkins, and E. M. Fulton, Jr., and a second yacht was ordered from the Herreshoffs, the name of *Vigilant* being selected for her.

Colonia was to be a keel boat, with steel hull; and as the draft of water outside the Bristol shops was limited, she was designed to draw but



Vigilant.

fourteen feet. The second syndicate decided on a deep centre-board boat, and at the same time placed an order with the makers of Tobin bronze, a very strong alloy, for an exclusive supply of this metal. As the demand for it was then limited, the first syndicate, though desirous of substituting bronze for steel in the plating of *Colonia* after the plans of the second syndicate were made known, was unable to do so.

The racing of these four big cutters throughout the season, ending in the formal trial races, fur-

nished good sport for the participants and enlisted the interest of yachtsmen throughout the world, the contests for the America Cup having long since ceased to be local either to New York or the yachting system of the Atlantic states. The results may be briefly summarized as follows: —

Colonia, under the able management of Mr. Rogers as "managing owner," — a new term then in yachting, — and of Captain Haff, showed every evidence of speed except to windward, where she was crippled by her lack of lateral plane. She was in many ways an enlarged *Wasp;* but while the draft of that famous boat was 24 per cent of her water-line length, the corresponding proportion in *Colonia* was but 16 per cent. In addition to this she, in company with *Pilgrim* and *Jubilee*, was handicapped by the serious defect of steel plating, — the rough scale produced in rolling, and which can only be removed by continual rusting and cleaning. Until the advent of *Shamrock III*, in 1903, with a nickel steel bottom covered with a hard, smooth coat of enamel, all iron and steel vessels have suffered in this way through their first season, as it is only after some months of immersion, and frequent scraping and painting, that it is possible to obtain a smooth surface which will

retain paint. Mr. Herreshoff, when appealed to personally by the members of this powerful syndicate, was busy with *Vigilant* and took no measures for the deepening of *Colonia's* keel, and she went into the trial races after some rather crude botch work on a dry-dock in New York. The true merits of her hull model were fully demonstrated several years later when, under the superintendence of Cary Smith, a centre-board was added at heavy expense and she was altered to the schooner rig. Sailed by Captain Charles Barr, she was for several years the head of her new class.

Vigilant, with C. Oliver Iselin as "managing owner" and Captain William Hansen as skipper, proved easily the best of the four, and was chosen to defend the Cup; in fact, she was the only one of the four radical experiments of the year which can be classed as other than a failure. She had some serious defects. Her centre of effort was abnormally far forward, and she steered very badly, while her weighted centre-board of four tons gave her much trouble, being jammed and even lost entirely at different times in her subsequent career. She had, however, many strong points. Up to this time there had existed no

restriction upon the number of crew carried in the large cutters, American and English, the consideration of useless weight on deck as compared with lead in the keel impelling the use of only such a number as was required for the effective handling of the sails, — some fifty odd. Taking advantage of this fact, *Vigilant* was designed with an excessive breadth of deck, — 26 feet 3 inches, as compared with 24 feet in *Colonia*, 23 feet in *Pilgrim*, and 22 feet 6 inches in *Jubilee*. Following the fashion of the old sand-bag racers in which Mr. Iselin did his first yachting, she carried a crew of seventy, which, lying out on the long lever afforded by the wide deck, gave her a great advantage over the lighter crews and narrower decks of her classmates and of the challenger. It may be said here, that one of the conditions absolutely insisted on by subsequent challengers was the measurement of the yachts with the same number of persons on board as were regularly carried in the races, thus preventing the use of the crew as ballast. In the matter of surface, the polished bronze, used for the first time in yachting, gave her a great advantage, especially in light weather, over the rough steel of the American boats and the coppered wooden bottom of *Valkyrie II.*

Jubilee was a combination of fin keel and centre-board, a ballasted board working through the centre of the steel fin, which, with its lead bulb, drew 13 feet 9 inches. In addition she had a smaller centre-board in the bow, to be used if required. Her sail plan was crude, with the mast stepped too far aft and very faulty details, including blocks of aluminum, which proved weak and useless. Skippered by John Barr, she gave occasional evidences of speed, but on the whole was a failure.

Pilgrim was an extreme fin, with less depth of body than *Jubilee*, finer fore-and-aft lines, and a draft of 22 feet 6 inches to the bottom of her bulb. She possessed in an exaggerated degree the initial faults of the type, steering very badly, and being at times absolutely unmanageable. Her skipper, "Dicky" Sherlock, was a very able racing man, and she had a good crew, among her Corinthians being Mr. Stewart, her designer, and Messrs. Adams; but she was a failure. After the races she was sold, her fin removed, and with other changes she was converted into a very good steam yacht.

Valkyrie II was a keel cutter of composite construction, 4 inches longer on the water-line

than *Vigilant*, 4 feet narrower, and drawing but 3 feet more to the bottom of her keel, taking no account of *Vigilant's* centre-board, which dropped to about 22 feet. Her sail area was 10,042 square feet as compared with 11,272 of *Vigilant*. Her skipper, Captain William Cranfield, stood very high in his class in England, and did some clever work in the Cup races in starting and manœuvring; but on the whole both skipper and crew were greatly outclassed by the defenders.

The first attempt at a race, on October 5, failed for lack of wind; on October 7, in a light and rather fluky breeze, *Vigilant* won by 5 minutes 48 seconds, corrected time. Two days later, over the 30-mile triangle, in a stronger breeze and smooth water, the wind freshening considerably during the race, *Vigilant* won by 10 minutes 35 seconds, corrected time, though she sprung her bowsprit on the second leg. Another attempt failed for lack of wind, but on October 13 there was a strong easterly breeze and a rising sea outside the Hook, while the weather predictions gave warning of a heavy gale moving rapidly up the coast. This prediction was not verified, but the breeze freshened all day, blowing very hard toward

the end of the race, though it fell at night. *Valkyrie* had increased her ballast on October 10, making her water-line 85.96 feet. Both started with jib-headed topsails over reefed mainsails, *Valkyrie's* reef being a small one. The course was fifteen miles to windward; and after two hours of hard sailing, in which *Valkyrie* was very skilfully handled, she led around the outer mark by two minutes. In setting her spinnaker after the English fashion, the sail in a loose bunch being hoisted from below deck and sheeted home as quickly as possible, it caught on the bitts and was torn a little. Running in a sea and heavy wind this tear soon increased until the sail went into tatters. Another, a large and beautiful sail of light fabric, was set in its place, the work being done very smartly, but it was too light for such a breeze, and it soon went to pieces. Nothing daunted, the "bowsprit spinnaker," corresponding to the American balloon jib-topsail but smaller, was set as the last resort.

On board *Valkyrie* no attempt was made to shake out the reef in the mainsail or to shift topsails; but as soon as *Vigilant* was off the wind, and her spinnaker, sent up in stops in a long, compact rope, was broken out and sheeted home,

the real work of the day began. Her balloon jib-topsail fouled in hoisting, and a man was sent to the topmast-head, and thence halfway down the topmast-stay, to clear the sail. After this was done a man was sent out along the boom, with a life-line from the masthead about his body, cutting the reef-points as he went; meanwhile a man at the topmast-head was lashing the working topsail, clearing the topsail-halyard and sending it down to the deck, while another man at the gaff end was doing the same with the topsail sheet. With the working topsail still in place, the whole mainsail was shaken out, the halyards sweated up, and the small club-topsail was sent aloft. By dint of this work, such as was never before witnessed in yachting, at the imminent danger of losing the mast and the race, *Vigilant* sailed past *Valkyrie* near the finish line and led her across by over two minutes, finally winning by forty seconds, corrected time.

By special agreement, at the request of Lord Dunraven, the one-gun start was adopted for these races, according to the universal custom in Great Britain, and what had then become an almost universal custom in this country. *Vigilant* was steered during a great part of the time

by N. G. Herreshoff himself, — something rather exceptional in Cup racing.

Undaunted by this defeat, Lord Dunraven challenged again in December 1894, and another match was made on much the same terms, except that the New York Yacht Club positively declined to repeat the one-gun start, standing out for an interval of two minutes during which the yachts might cross, their true time of crossing being taken.

Early in 1894 *Vigilant* was sold to George J. and Howard Gould, and with Captain Haff in command she was sent across the ocean, Mr. Herreshoff joining her on the Clyde and sailing in some of the races. One of the most important events of the year was the sinking of *Valkyrie II* in a collision with *Satanita* in the first race of the 90-foot class on the Clyde, thus preventing any trial of the old opponents under British conditions. There was, however, the sister cutter, *Britannia*, owned by the Prince of Wales and commanded by Captain John Carter of *Genesta;* the Fife cutter *Calluna;* and the Soper cutter *Satania*, — all of *Vigilant's* class. *Britannia* has proved, on the whole, one of the most successful and notable yachts in British history, but the other two were virtually failures.

Vigilant had been improved by alterations to her rig and ballast, and she was in competent hands, but in seventeen races with *Britannia* the latter won twelve times. *Vigilant* was the faster through the water in a strong breeze, but she was greatly inferior in manœuvring power and quickness of turning.

The result of this racing was seen in the next Cup contestants, — the challenger, *Valkyrie III*, designed by Watson, and the defender, *Defender*, designed and built by the Herreshoffs. *Valkyrie III*, owned by Lord Dunraven, Lord Lonsdale, Lord Wolverton, and Captain H. Le B. McCalmont, was given a breadth of 26 feet 2 inches on a water-line of 88 feet 10 inches, with a draft of 20 feet. With increased draft her keel was longer and straighter than that of her predecessor, giving increased lateral plane for the added power, and also lowering the ballast, to the same end. She was virtually a wide, saucer-shaped body with a deep fin, following the general idea of *Vigilant*, the design being excellently adapted to the average conditions of match racing outside Sandy Hook. She was of composite construction, but the wood planking was not coppered, being coated with a preparation of tar, giving a smooth, hard surface.

In *Defender* Mr. Herreshoff abandoned all suggestion of *Vigilant*, making her a keel cutter of very moderate breadth, but 23 feet, on a water-line of 88 feet $5\frac{1}{2}$ inches. Her draft was 19 feet, or 5 feet more than the keel *Colonia*, and her keel was shorter and more rockered, following the example of *Britannia*, with a view to much quicker manœuvring than was possible with *Vigilant*. Her construction was still more elaborate than that of *Vigilant:* steel frames were used for the main members, with manganese bronze — another expensive alloy — for the bottom plating; but the deck beams, straps, and much of the interior bracing, with all the plating of the topsides, were of aluminum, the first use of this new metal in a yacht of any size. The sail area was 13,500 square feet, or 400 square feet less than that of *Valkyrie III.*

Vigilant was further altered and refitted by George J. Gould, and with Captain Charles Barr at the wheel, sailed against *Defender* through the season, the latter handled by Mr. Iselin, who joined with W. K. Vanderbilt and E. D. Morgan in building her, with Captain "Hank" Haff as skipper. There was much friction and ill-feeling between the two parties, and protests were frequent. In

the trial races *Defender* developed serious structural defects, in particular about the mast step, which at one time was in danger of going through the bottom of the boat; but these were successfully remedied, and she was selected to defend the Cup.

The first race, fifteen miles to windward and return, was sailed under conditions which of old would have insured the victory of the cutter against the sloop, — an "old sea," from the eastward, and light and fluky wind. This time the defender was relatively the cutter, with her moderate breadth, comparatively deep body, compact form, and decided angle of heel; while the challenger, like the old sloop, was wide and comparatively shoal, standing up straight, and being knocked about by the sea without wind enough to steady her and put her to a good sailing angle. Under these discouraging conditions, evident from the start, she was not sailed as well as *Defender*, and the latter won by over seven minutes.

After the finish Lord Dunraven made a complaint to the Cup committee that *Defender* was immersed below the water-line officially measured and marked, and as a result she was remeasured

and found to be of the correct length. The matter was apparently dropped; but, dissatisfied with the failure to investigate the question of possible tampering with the ballast between the two measurements, Lord Dunraven renewed his charges on his return to England, the result being an international quarrel of serious magnitude. A thorough investigation of the whole matter by the New York Yacht Club during the following winter, Lord Dunraven visiting New York to give his testimony, failed to establish any reasonable ground for the charges.

This matter temporarily disposed of, the second race was started on September 10, over the triangular course, in a moderate breeze and smooth water. Within the last few seconds before the starting-gun a foul occurred between the two yachts, *Valkyrie* being to windward and her boom end catching the starboard topmast-shroud of *Defender* and tearing it from the broken end of the spreader. While *Defender* was compelled to luff up, being handicapped by over a minute, *Valkyrie* continued the race. Under the circumstances — *Defender*, though her topmast stood, being crippled for the day on starboard tack — the race was most exciting. *Valkyrie* held

her lead over the course, and finally won by forty-seven seconds, corrected time. Sailing the triangle with all marks to port, *Defender* was at a serious disadvantage, not only on the first leg to windward, but over the whole of the second leg, ten miles on the starboard tack, only a small jib-topsail being set. On this leg, however, her sheets were trimmed to much greater advantage, as has almost invariably been the case on the defending yachts in reaching in the Cup races of modern days.

A protest on the part of *Defender* was sustained by the regatta committee after a hearing of both sides, the general opinion being that this was the correct verdict. The first cause of the foul was the crowding of the fleet of pleasure steamers, notably the *Yorktown*, a large coasting steamer which lay close to the course. All the evidence, including many important photographs, showed that *Valkyrie* took the active part in the preliminary manœuvres, chasing *Defender* around the *Yorktown;* and, as the two came within view of the line, finding herself in a very limited space between *Defender* to leeward and the committee boat to windward, with more time than she wanted, she bore away, *Defender* meanwhile

holding her course on the wind; and as she came dangerously close to *Defender*, she luffed quickly. The justice of this decision has been very generally accepted by yachtsmen.

In the writer's opinion the accident was due to the fact that Captain Sycamore, a very able British skipper who came out to steer the yacht, under Captain Cranfield, had for several seasons sailed *Corsair* and *Vendetta*, — 40-raters similar to *Queen Mab*, both with small sail plans, but 4000 square feet on 60 feet of water-line, or about the same as *Wasp* on 46 feet. In these boats the boom extended but a short distance over the counter, and they could be manœuvred safely in very close quarters. With a boom of 105 feet, or nearly 120 per cent of her water-line length, extending far outside of her long counter, *Valkyrie III* required a much greater space for manœuvring. Captain Sycamore had sailed the yacht only three or four times in competition with other vessels, and in the excitement of the close start he failed to realize that a manœuvre which would be perfectly safe in a fleet of 40-raters was extremely dangerous when two Cup yachts of unlimited sail area were involved.

Mr. Iselin personally offered on behalf of *De-*

fender's owners to call the race off and resail it; but to this Lord Dunraven would not consent, apparently accepting the decision of the committee awarding the second race to *Defender*. Immediately after the finish of this race he had written to the committee declining to start again unless a perfectly clear course could be had; but after two days of negotiation the third race was started on September 12. The day was clear, with a smooth sea and a good breeze, the normal conditions for which *Valkyrie* had been designed, this being the best opportunity thus far afforded to show her speed. So much had been said and printed about the obstruction on the part of the attendant fleet that all vessels were at a distance from the starting-line. The two yachts came out as usual, with everything in readiness for the start. *Defender* crossed the line on the gun, *Valkyrie* following slowly. When clear of the line the latter turned, her racing flag was hauled down and the burgee of the New York Yacht Club, of which Lord Dunraven was an honorary member, was set in its place, and she headed for New York, leaving *Defender* to sail the course alone, thus completing the series of three wins.

After his return to England, Lord Dunraven

issued a pamphlet with his report of the match, in which he charged that *Defender* was ballasted below her measured water-line in the race of September 7. As soon as these charges were known in New York, Mr. Iselin wrote to the club demanding a full investigation. A meeting was immediately held, and Commodore Edward M. Brown appointed as a special committee Messrs. J. Pierpont Morgan, William C. Whitney, and George L. Rives. This committee, acting under the liberal power intrusted to it, invited the aid of Captain Alfred T. Mahan, U.S.N., and Edward J. Phelps, former minister to England, — both men well known and highly esteemed abroad.

This committee of five instituted a thorough and searching inquiry, held at the New York Yacht Club house in New York, Lord Dunraven coming over to give testimony, while many witnesses were examined. The result was the complete exoneration of Mr. Iselin and all connected with *Defender*. As no apology was offered by Lord Dunraven after he had failed to sustain his charges, he was expelled from the club, — a tardy resignation reaching New York only after this action had been taken. The very sensible and

businesslike action of Commodore Brown, in furthering a public investigation, and the high character of the men chosen by him to conduct it, resulted in permanently settling what might have been a serious international misunderstanding.

The action of Lord Dunraven in issuing his pamphlet was never indorsed by British yachtsmen, nor have they ever indicated their pride in him as a representative of British sporting usage. If report be true, his abrupt withdrawal from international racing was but a repetition of his previous leave-taking of journalism and later of politics. It is worthy of note that he was the first challenger who was ever permitted to make a match by mutual agreement on terms perfectly fair to both parties, obtaining freely much more than had been refused to such good sportsmen as Sir Richard Sutton and Lieutenant Henn.

CHAPTER XVI

SMALL YACHTING AND THE SEAWANHAKA CUP

Spruce IV.

First challenger for the Seawanhaka Cup, 1895.

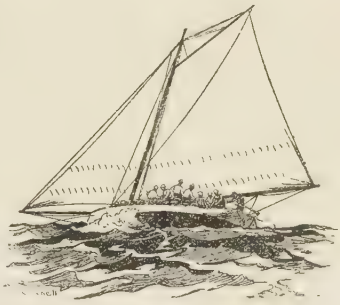
It is possible to fix with approximate accuracy the origin of yachts of large size and of yacht racing, but it is impossible to trace back the similar stage of development in small yachts and sailing boats. In the early days the row-boat and small sail-boat were the universal vehicles of ferriage and water transit over short routes, as that over the Delaware River at Philadelphia and Trenton, the Hudson and East rivers at New York, and about the harbor of New York. The handsomely modelled "Whitehall boat," a few survivors of which may still be seen about the Battery or in use by water-side gentlemen whose exact avocations will not bear too close a scrutiny,

at one time carried the beginning of that traffic which now crowds three great bridges and a fleet of ferry-boats; and in addition it was the common means of communication between the shipping of New York and the shore. Speed, under oars or the simple spritsail whose mast could be shipped or unshipped in a moment, was prized alike by the rival ferrymen, the boarding-house runners, and the thieves of the water front, as well as by their pursuers; and there were many close races in which no starts were timed and no money prizes awarded. On the longer routes, the regular ferries to Staten Island, and the points on Staten Island Sound where the stage routes began, the sail was used in preference to the sweep in the pirogues, or periaguas; and here, again, competition was an element of business success.

There are no records of the date at which men first found leisure to neglect the calls of business and sail solely for pleasure; but we have already seen that in the early fifties the pleasure cat-boat was not only an established institution about New York, and Boston as well, but it had made its way across the Atlantic. For many years after it held the field without a rival, merely varying in

Seawanhaka International Challenge Trophy for Small Yachts, 1895.

detail of model in different localities, according to the conditions of its environment. On the Delaware River, at and about Philadelphia, it took a most dangerous and vicious form in the "hiker," extremely wide and shoal and with an enormous rig; about New York the popular model was but little better, though exposed to rougher water on the Bay and Long Island Sound. The only ballast used was sand in bags, these being piled high on the weather side when on the wind, and shifted as promptly as possible on each tack; their effect in giving stability was increased by the numerous crew, also to windward.



Open "Jib-and-mainsail Boat," with Crew and Sandbags to Windward.

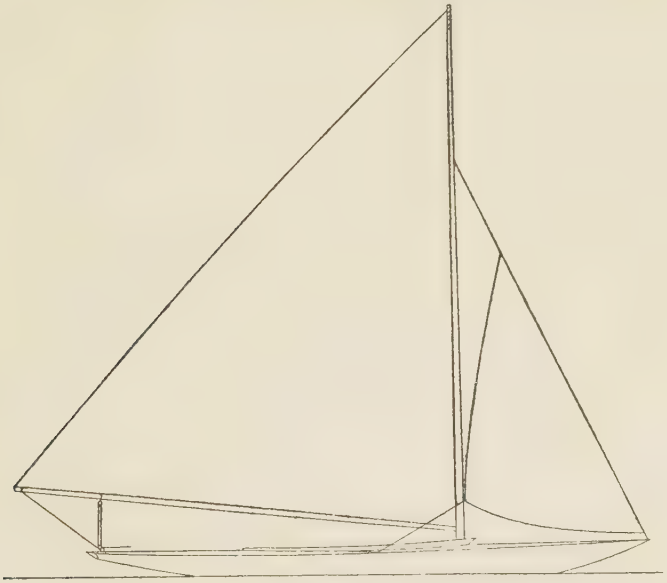
New York, 1850 to 1885.

The racing of these boats was popular on all the waters within fifty miles of New York, matches being made for large purses, while the more noted skippers were highly esteemed by their respective partisans. Though the same type of boat prevailed in the races about Boston, there were many of much superior model, with increased

draft of hull and freeboard; and farther south on Cape Cod, where the boats were used for fishing and lobstering, often on the open sea, were found the finest of the "cat" family. The rig of these craft was most commonly that from which the type took its name, — the "cat" mainsail with no jib, — but it was a common thing to shift the mast aft, in an extra step, shipping a bowsprit and setting a jib. Many boats were regularly equipped with this double rig, sailing as cat-boats or "jib-and-mainsail boats" according to the entries and prizes in some particular race.

The first rival of the cat-boat was the canoe, introduced from England to America on the formation of the New York Canoe Club in 1871; prior to this time the ambitious tyro who sought to fit himself for racing in decked yachts, or who aimed at distinction as a single-hand cruiser, had no choice save the unhandy and dangerous cat-boat or the Whitehall boat with oars and a sail. From its first introduction canoeing proved popular in the extreme, enlisting among its votaries many young men who have since been famous in yachting. In the sailing canoe as it then was, and as it continued to be for about fifteen years, a man could cruise to a certain rendezvous under

sail or paddle, according to the weather, carrying his stores, tent, and bedding; stripping his boat, he could enter in both sailing and paddling races,



Ethelwynn.
Sail plan.

and after the meet was over he could cruise home.

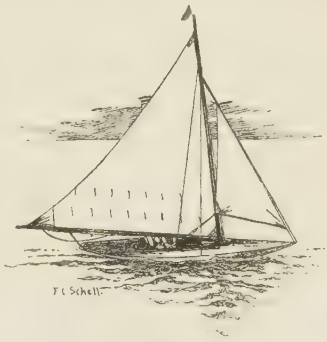
In the early eighties, as a result of the larger cutter agitation, there came into use about New York many small cruisers, in length from fourteen feet water-line upward, of the cutter type, some

very narrow but most of fairly large breadth. In Boston the small keel sloop could claim a still earlier development. From this time on the development of the small yacht followed closely that of the large. Mr. Burgess designed many small cutters and deep centre-board boats, and a little later the fin-keel type was first exploited in the very small classes before extending to the larger. One notably successful racing class for a couple of seasons was the 21-foot water-line class of Massachusetts Bay, formed in 1892, with a fine fleet of centre-board sloops, wide and narrow, with varying sail spreads, and also fin keels.

By this time the sand-bag cat-boat had virtually disappeared from the racing in the East, the fastest of the old champions being sold to young yachting communities on the small lakes of Wisconsin and Minnesota and their places being taken by more modern types, the fin keel finally being the most numerous. The smallest size in general use was the 21-foot class, next to this being the 25-foot.

As an outgrowth and development of canoeing, a distinct class of small yachts came into general use in England late in the eighties,

increasing very rapidly. The Solent proved a healthy nursery for this infant fleet, and it in time almost rivalled the popularity of the large yachts. A special class of racing men came into existence, much time and money being devoted to designing, building, and racing yachts of one-half, one, and two and one-half rating.



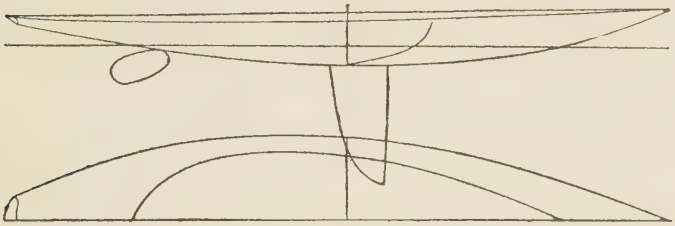
Ethelwynn.
First defender of the Seawanhaka Cup.

In the spring of 1895 a member of the New York Canoe Club, William Willard Howard, a racing canoeist who had visited England to meet the British canoe sailors, wrote from London to some of his fellow-members in New York, stating that J. Arthur Brand, of the Minima Yacht Club, would like to visit America with his half-rater *Spruce III*, provided any races could be arranged with yachts of the same class. At this time no boats of the kind existed, but Mr. Howard's letter was laid before the Seawanhaka Corinthian Yacht Club by several of the recipients, who were also members of that club. The idea was first

indorsed by the race committee and then by the club, and in a short time the plans were definitely formulated for the establishment of a permanent international challenge cup for small yachts. Mr. Brand was notified, and negotiations were made between the Minima Yacht Club, of London, and the Seawanhaka Corinthian Yacht Club for a series of three out of five races, to be sailed in September on Long Island Sound, off the club station at Oyster Bay; the courses to be alternately windward and leeward and triangular, of twelve nautical miles. The sum of $500 was quickly subscribed for the cup, — a very handsome piece of silver, — and then the club had to consider the question of its defence.

The half-rater class, by the rating rule then in existence (length multiplied by sail area and the product divided by 6000), included small yachts, largely fin keels, of 15 feet water-line and 200 square feet of sail. No such class was known in America, the nearest approach being some small fin-keel cruising boats designed for canoeists; but to meet the foreign visitor six yachts were specially designed and built, *Ethelwynn*, *Trilby*, *Olita*, *Question*, *F. & R.*, and *L'Indienne*, — a seventh, *Trust Me*, entering with these in the trial races.

Olita (centre-board) and *Trust Me* (fin keel) were designed and built by the Herreshoffs, — the most costly of the fleet; but they proved failures in the trial races. The boat finally selected, *Ethelwynn*, was designed by W. P. Stephens, of the Seawanhaka Corinthian Yacht Club and the New York Canoe Club, a shoal centre-board boat of the type



Ethelwynn.

introduced several years before in England by Linton Hope, but adapted to the different rule and local conditions; the races being in the 15-foot class under the Seawanahaka rule, — the length (15 feet) added to the square root of the sail area (225 square feet) and divided by 2, giving the measurement.

Ethelwynn was hastily designed and built, and but little time remained for preparation before the trial races; but she proved easily the best all-round boat, and there was no question as to the pro-

priety of her selection. She met *Spruce IV*, a new boat specially built for the match—at the end of September, after the *Valkyrie-Defender* match; and after a prolonged series of trials lasting for a

Glencairn I.
Sail plan.

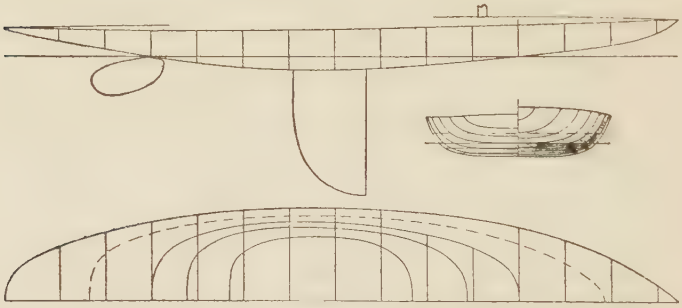
whole week, she won three races to two of *Spruce*, thus retaining the cup. The last race had hardly finished when a telegram was received at Oyster Bay from the Royal St. Lawrence Yacht Club of Montreal, Canada, announcing that club's wish to

challenge for the cup; and as this was confirmed by letter, the arrangements were soon made for a match in 1896.

The half-rater, or 15-footer, — the terms being almost synonymous, — was unknown in Canada; but the club, its challenge being accepted, went bravely to work to provide a fleet. Most of the new yachts were designed by two amateurs, G. Herrick Duggan and F. P. Shearwood, old canoeists and yachtsmen, engineers by profession, associated with the Dominion Bridge Company. About sixteen boats were built during the winter and tried during the early spring and summer, the best of them — Mr. Duggan's *Glencairn*, sailed by himself and Mr. Shearwood — being selected as the challenger. The defence was equally busy, and twenty-seven boats, nearly all of them specially built for the purpose, started in the first trial race at Oyster Bay.

The winning boat, *El Heirie*, was designed by a young amateur, who also sailed her, — Clinton H. Crane. Like most of her class, she had nearly 15 feet of water-line length, with a little over 200 square feet of sail; but the challenger was of very different form, of greater breadth, with about the same over-all length, but with a water-line which

measured but 12 feet 6 inches, thus allowing her under the rule to carry nearly 300 square feet of sail. There was no doubt in the minds of the defenders as to which of the two would win; but after races in both light and heavy weather, one in a thunder squall, *Glencairn* proved her all-



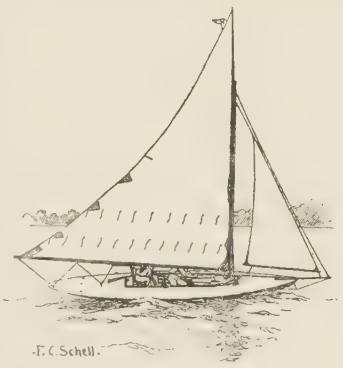
Glencairn I.

round superiority and carried the cup away with her to Canada.

One of the trial boats of 1895, *Question*, designed and built by L. D. Huntington, Jr., of New Rochelle on the Sound, was of most peculiar form, somewhat similar to the New Haven sharpie, with flat bottom and flat sides meeting at almost a right angle. Though roughly and heavily built, and slow in light weather, with a strong breeze and sea she was easily the fastest of the fleet. Her all-round performance in the

trial races was not notable, but at times, when all conditions fitted her, she was remarkably fast. During the winter the question of her peculiar design and its good and bad qualities was very thoroughly discussed in one of the yachting journals; and in following up the investigation thus started, Messrs. Duggan and Shearwood were led to a departure quite as radical as that in *Gloriana* a few years before.

In studying the common bateau form, with flat floor and sides and square bilges, it became evident that with a rockered floor the length on the water-line might be made very short; but if the boat, by means of movable ballast, were inclined until only one edge was in the water, she would have a greatly increased water-line and decreased breadth, being, in fact, instead of a wide, square box a long, narrow canoe. The problem then was, as all shifting of dead weight was prohibited, to produce a form with a very short measured



Glencairn I.

water-line when upright and in normal trim, but which could be heeled and held safely and steadily at a much greater angle than was desirable in the case of the normal type of yacht.

The publicity given to the discussion of *Question* led others to attempt the same problem. A number of extreme scows, as they were soon called, were among the trial fleet of the defence, and the successful *El Heirie* was built upon the same principle; but the results accomplished by Messrs. Duggan and Shearwood were far ahead of all others. With comparatively curved and yacht-like lines and a general form that was in no way freakish or clumsy, *Glencairn* had the minimum of measured water-line and the maximum of effective length when heeled by her crew; she was fast both on the wind and free (a weak point with many of the scows) in light weather, and she was very able in a blow.

The third match for the cup took place in 1897 on Lake St. Louis, the challenger being the Seawanhaka Corinthian Yacht Club, represented by Mr. Crane in a new yacht, *Momo*, of his own design; while Messrs. Duggan and Shearwood defended the cup in *Glencairn II*, winning very easily. *Momo* was an improvement on *El Heirie*,

in the direction indicated by *Glencairn I*, but like her older sister she lacked freeboard and power, and though fast in light weather, was easily beaten in any force of wind. Again in 1898 Mr. Crane returned with a new boat, *Challenger*, very similar to *Glencairn II*, only to find that his opponents had developed the initial idea of effective length though heeling to a far greater extreme, in a new boat, *Dominion*.

By this time both parties had departed from all semblance of yacht form and traditional principles of designing, and it was merely a question of which could evade the Seawanhaka rule in the most flagrant manner. Some of Mr. Crane's boats were round in the bows like a ferry-boat, and the trial races of the Seawanhaka Corinthian Yacht Club brought together the most grotesque collection of craft ever seen in civilized waters, the name "freak" being one of the mildest applied to them.

Dominion, with a water-line for measurement of but 17 feet 6 inches, was 37 feet long on deck, and with sides nearly parallel and square ends. When heeled, she immersed the entire length of side; and to perfect the immersed form of this portion, the bottom was cut away in the centre by

a U-shaped hollow from end to end, there being two distinct hulls under water united by a single hull above. When first viewed by the challengers, she was pronounced a catamaran, and objection was made to her on this ground, with the statement that catamarans had been formally barred from racing with yachts of normal form by the New York Yacht Club in 1877. A search of the records of the New York Yacht Club failed to establish any such precedent, nor was it proved that she was really a catamaran, her whole form and structure being radically different from the peculiar Herreshoff racing machines which alone made the name famous. The races were sailed, *Dominion* winning with ease, her speed to windward being something wonderful. Much discussion followed, and the Royal St. Lawrence Yacht Club abandoned the type, confining itself in the future to the general

Senneville, Seawanhaka Cup Defender, 1901.
Typical Duggan 20-footer.

type of *Glencairn I* and *Glencairn II;* but many other double-hulled boats similar to *Dominion* have since been built in different parts of the United States and freely admitted to races.

In 1899 Mr. Crane came for a third attempt with a new boat, *Constance*, but she in turn was beaten by *Glencairn III*, the match ending in a serious dispute, — the final one of many between the two clubs. Since then the cup has been successfully defended against challengers from England, from the West, and from New York and Boston, many types of freak racing machines having visited Lake St. Louis only to meet defeat at the hands of Mr. Duggan and his able associates.

The interest in the first match for the Seawanhaka cup was by no means local, but extended throughout the country; and with the publication of the news of the trial and Cup races, of the descriptions and lines of the new class, and the discussion of *Question* and her performances, yachtsmen in remote localities were led to build similar boats. The fact that an important international match was being contested by yachts costing but $600, small enough to be transported on an ordinary wagon, and drawing but six inches of water, or four feet with the centre-board down,

of itself suggested the introduction of the type on many small and remote inland lakes where yachting had been unknown. The class was taken up with much enthusiasm in the Middle West, where the racing thus far had been confined to a few localities and to the old type of sand-bag boats purchased in the East. New clubs were formed, new men came into the racing ranks, and new boats without number were built. Many of these were designed by local amateurs, while the leading English and American designers were called on for others.

This type of racing boat, the only one possible on many small bodies of water, has proved permanently popular, and a strong and vigorous yachting system, including many clubs, now exists in Wisconsin, Illinois, and Minnesota. It is no longer the fashion to come East for new ideas, but the Western racing men, amateur and professional together, have evolved distinct types and methods of construction of their own. The small size of the boats makes it easily possible to transport them by wagon from one lake to another for local matches, or to ship by rail, as has frequently been done, for races about New York or Montreal.

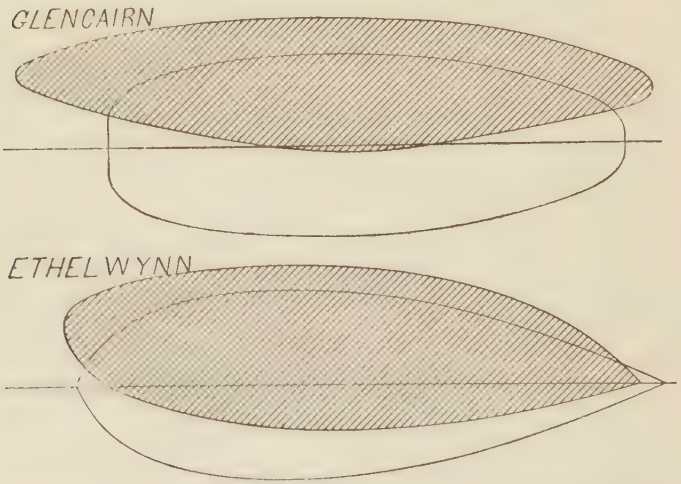
CHAPTER XVII

THE SCOW TYPE IN DESIGNING

Ethelwynn was of a general type common to all periods of yacht building, and to which even *Gloriana*, with her many radical features, belonged. The main characteristic of this type is a midship section more or less of the V form, when closely analyzed, though it varies between the wide extremes of the centre-board sloop with flat floor and round bilge and the deep Burgess boats of S section. Different as they were in their superficial features and also in many essentials, all of these models had in common a V form, — at least to the vertical sections of the forebody; and also to the horizontal sections, the load water-line, and others above and below it. In all alike, the narrow cutter or the wide, shoal skimming-dish, the first principle of sailing is to keep them as nearly upright as possible. That the cutter at times laid her sails almost flat on the water was not intentional with either designer or skipper, but was an inherent fault of her design,

which was supposed to be compensated by advantages in other directions.

In all of these yachts the effect of heeling was the same. As the hull left the perpendicular



Comparison of water-lines of *Ethelwynn* type and *Glencairn* type. The plain black lines show the load water-line planes in upright position, the water-line length of *Ethelwynn* being 15 feet and of *Glencairn* 12 feet 6 inches. The shaded portions show the load water-line planes when heeled to an angle of about 15 degrees for *Ethelwynn* and 22 degrees for *Glencairn*. In *Ethelwynn* the effective length has actually decreased with the heeling, while the breadth is nearly the same. In *Glencairn* the effective length has increased considerably, while the breadth on the water line has decreased, thus making of the immersed portion of the hull a long, narrow canoe.

under the heeling impulse of the sails, she immersed more or less of her lee bilge, and consequently the axis of the water-line plane, the straight line between the point where the fore

edge of the stem intersects the water and the similar point on the stern-post or the ridge of the counter, lifted out more or less according to the model. The effect of this was to shorten the actual water-line as the yacht heeled, this shortening being very marked at the bow; at the stern, however, there was a corresponding lengthening as the round of the quarter became immersed. In the cutter, both the narrow and wide types, and in many other types, the longest water-line possible was that when the yacht lay at anchor in an upright position, the length decreasing rapidly as she heeled. With the very full water-line, introduced in *Gloriana* and carried to greater extremes in later yachts, this shortening of the water-line through heeling was less pronounced, but still it existed.

If a common oblong box, such as a cigar box, be set afloat, its length will be the same at all angles of heel, being neither less nor more than the length of top and bottom. If, however, the ends of this box be cut away in wedge-shape from beneath, the conditions are entirely changed. When upright, the box floats at a certain water-line whose length is intermediate between the length on the bottom and the length on the top,

the breadth on this water-line being necessarily the extreme width of the box. As soon as the box is heeled, however, one side rises and the other is immersed, with a constant gain of water-line length until, when the upper edge of the immersed side is level with the water, the water-line length has increased to that of the top of the box. At the same time, the displacement necessarily remaining the same, the midship section has changed from a rectangle to a V, and the breadth on the water-line, instead of being equal to the total breadth of the box, is perhaps less than half. Disregarding that portion in the air, the immersed portion now has the form of a long, narrow canoe, — a form well adapted for speed and for easy performance in rough water.

As long as it rests upright, the box, with its short water-line and great breadth, is of a poor model for speed; it has a maximum of wetted surface, and the shoal, flat midship section permits it to make leeway. When heeled, however, the proportions and form are such as to give speed, the wetted surface is reduced, and the section, now a deep V, gives good lateral resistance of itself, without the aid of a centre-board. If the box be anchored, being naturally in the upright

position, it will be tossed about by every movement of the water, and its overhanging bow and stern

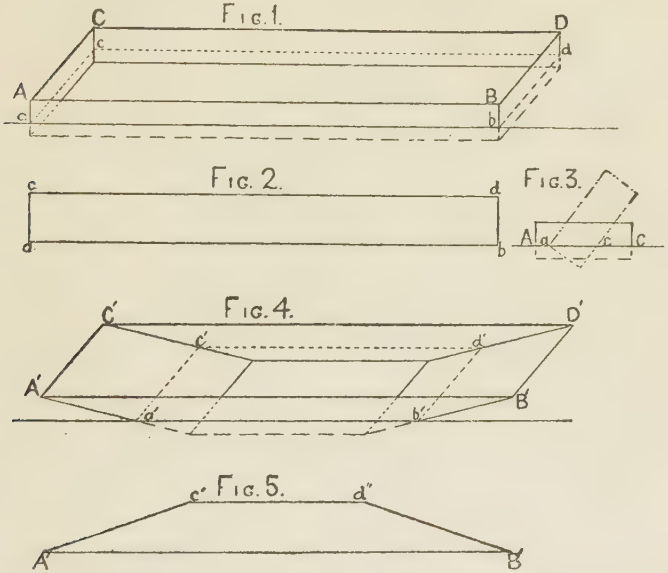


Fig. 1. — Rectangular box, 30 inches long, 6 inches wide, and 2 inches deep, immersed to water-line *abcd*.

Fig. 2. — Load water plane of Fig. 1, when heeled to angle shown in Fig. 3. Length, *ab*, is the same as *AB* (30 inches); breadth, *AC*, in upright position (6 inches) now becomes *ac* (3 inches).

Fig. 3. — End view of box, in upright and inclined positions.

Fig. 4. — Box with ends cut away; the length on top is still 30 inches, but the length on measured water-line, *a'b'*, is but 18 inches. Load water plane in upright position, *a'b'c'd'*, is a rectangle, 18 inches long and 6 inches wide.

Fig. 5. — Load water plane of Fig. 4, when heeled until edge *A'B'* is level with water; the effective sailing length, *A'B'*, is 30 inches, while the breadth is but 3 inches.

will be hammered as soon as the water becomes a little rough. When heeled, however, the new form is such as to take the seas very easily.

The whole problem of the modern racing scow, which has vexed the yachting world since the advent of *Question*, lies in this simple demonstration of the upright and inclined box.

Some of the old models, such as the sharpie and the skipjack, or flattie, possess some of the features of the modern scow, but these are purely accidental and involve no principle of design. Nearly all of them, however flat and angular in the middle body, have the V section forward, with a more or less sharp forward water-line, which prevents any gain in length as they heel. *Question* embodied some of the main points of advantage of the modern scow, but neither she nor the later efforts in the same line by her designer were notably successful.

A very simple experiment with a cigar box and a vessel of water, as just described, will serve to demonstrate the basic principle of the scow type, — the gain of effective sailing length and the improvement in form through heeling to an abnormal angle. The successful application of this general principle in the production of a racing yacht is a much more difficult matter, and most attempts have resulted in failure. There are many reasons, both theoretical and practical, why

the plain angular box form, in spite of the great gain in length, is not the best; but it is the one which, from the apparent simplicity of the problem, has attracted the greatest number of experimenters. The extreme to which this abnormal type has been carried is seen in the yachts which raced for the Quincy cup in 1902.

This cup was established in 1898 by the Quincy Yacht Club, of Quincy, Massachusetts, as a perpetual challenge cup, open to yachts of all organized yacht clubs, regardless of nationality, the only limitations being that the total weight of crew should not exceed 850 pounds, and that the load water-line, measured with crew on board, should not exceed 21 feet. It would be difficult to frame a rule offering greater encouragement to a type whose vicious tendencies are recognized by all yachtsmen; and it is in no way surprising that while at the outset the cup was contested for by yachts of fairly normal type, in a very few years it produced such machines as had never before been equalled in yachting.

The successful defender of the cup for the Manchester Yacht Club in 1902, *Outlook*, designed by W. S. Burgess, the son of Edward Burgess, was 52 feet 7 inches in length on deck, on a

measured water-line of 20 feet 10 inches, her breadth being 16 feet on deck and 13 feet 6 inches on the water-line, with a depth of about 2 feet and an area of 1800 square feet in mainsail and jib. She, however, was even exceeded by another competitor in the trial races, 55 feet on deck, 17 feet in breadth, and with a sail area of 2000 square feet. The hulls of these boats drew but a few inches, large centre-boards and deep rudders being necessary to provide lateral resistance and steering power. When heeled by the great area of sail, or by the entire crew being placed to leeward if the wind was very light, they immersed nearly the entire length of the deck edge, sailing on an effective water-line of about 50 feet as compared with the measured water-line of 21 feet; the breadth at the same time being reduced to about 8 feet instead of 16 to 17 feet when upright.

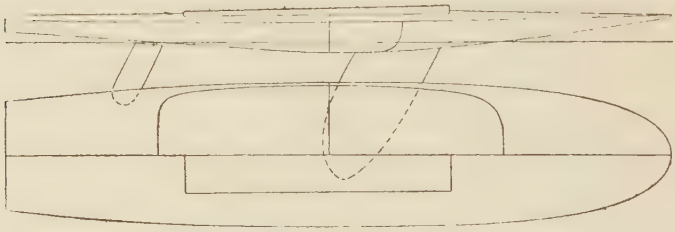
Outlook.

This extreme type of scow has been developed

to the highest point of perfection on the small western lakes, — notably White Bear Lake, in Minnesota, where it has been tried in competition with many varieties of less extreme proportions and form.

The most successful results thus far attained have been in the very large fleet of small yachts of the 15-foot, 20-foot, and 25-foot classes designed by Messrs. Duggan and Shearwood in conjunction for the Seawanhaka cup contests from 1896 to the present year. All of these were designed upon the principles of the scow, as described above, with a short measured water-line and a material gain in effective length when heeled; but these principles have been adapted, as far as possible, to the conventional yacht form, with curved lines in all directions instead of straight lines and positive angles. In addition, the extreme scow has very little freeboard and no sheer, being merely a flat, oblong platform aptly described by the popular nicknames of "sidewalk" and "barn-door." The Duggan boats, on the contrary, are distinguished by a generous amount of freeboard and more or less sheer. While the extreme type has practically straight, parallel sides and square ends, the Duggan boats, with

the exception of *Dominion*, have the curved sideline, the pointed bow, and the square transom of the normal yacht. While the flat scow is intended



Extreme Type of Racing Scow, 1900.

and used exclusively for racing, all of the Duggan boats are fitted with large cockpits, and are used for pleasure sailing quite as much as for racing.

The phenomenal speed of such yachts as *Outlook*, which has excited such comment among yachtsmen, is very largely fictitious, and is based upon the assumption that such a yacht really measures but 21 feet on the waterline. As a matter of actual fact, she only attains this speed when, by expert handling and the agility and weight of her crew, she can be balanced close to one particular angle, at which she becomes a canoe of about 50 feet length and 6 to 8 feet breadth, with very fine lines and an enormous sail plan; that large portion of the hull

out of water to windward being in itself ballast in an advantageous position and a lever for the weight of the crew.

The production of the scow type was possible only through an open and palpable evasion of the spirit of the length-and-sail-area rule in vogue in 1895–1896 and for some years later; the building of a trick hull and the heeling it, as described, being entirely contrary to the principle upon which the rule was based. The inevitable result of this evasion, if freely permitted, was pointed out immediately by some of the more conservative yachtsmen; but the clubs, one and all, refused to take cognizance of it by such a timely alteration of the rule as would place a fair value upon the length actually utilized in sailing. The result has been that this type in several more or less extreme forms has dominated yacht designing in all the smaller classes in America, and has also found its way into French and Italian yachting in the very small classes. Almost as a matter of course, its influence for evil has been felt to a greater or less degree in the large classes, and even in cruising yachts.

The most ambitious attempt at scow design-

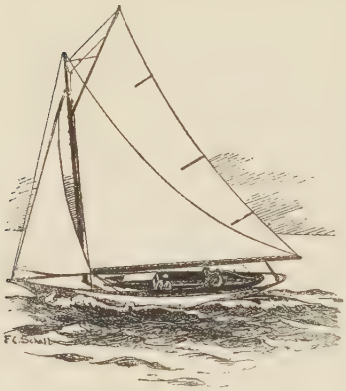
ing was that made in 1901 in connection with the America Cup match of that year, the yacht, *Independence*, being designed by B. B. Crowninshield, of Boston, for T. W. Lawson of the same city, with the intention of competing in the trial races. Owing to a dispute between the New York Yacht Club and Mr. Lawson, who was not a member of the club, the yacht did not take part in these races; and through this and other circumstances it is impossible to pass a fair opinion upon the real merits of her design as compared with the more moderate forms of the Herreshoff boats. Her dimensions were: length over all, 140 feet $10\frac{1}{2}$ inches; water-line, 89 feet; breadth, extreme, 24 feet; breadth at water-line, 23 feet 5 inches; draft, 20 feet. Being a radical experiment in construction, with no data to guide her designer in a form which was inherently weak, she leaked badly, and after one or two experiences in a sea she was permanently damaged. In the course of a very brief and inconclusive racing career she gave evidences of exceptional speed at times, under certain conditions, and at the same time of the possession in a marked degree of the defects noticed in the smaller scows. Those connected with her rested

firm in the belief that her faults were not inherent to her type, but were due to lack of experience in racing machines of such great size, and to the haste with which she was designed and built. On the other hand, there is reason to believe that, like most of her type, she would under the most favorable conditions prove a very uncertain and uneven performer, extremely fast on certain courses and in certain winds, but slow under the average conditions under which races are now sailed. After being in commission just three months, she was broken up; the experiment, including the incidental expenses of running, having cost her owner over $200,000.

Independence was, of course, a fin-keel scow, of a type which has become very common in the classes of decked cabin yachts up to thirty feet or so water-line about New York and Boston, with curved lines and generally rounded form, but embodying the scow principle as far as is possible. The trend of all recent legislation is toward a tardy but effectual revision of the measurement rule, which will prohibit the type in the future in all yachts of any size.

CHAPTER XVIII

THE "ONE-DESIGN" AND RESTRICTED CLASSES



Original Knockabout.

Of the many measurement rules in use at different periods and in different localities in America, the "length-and-sail-area" rule, devised by Mr. Hyslop, has been the most generally used, and for the longest time. Adopted in an experimental form in 1882, it was changed in the following year to the familiar formula $\frac{L+\sqrt{SA}}{2}$, or the mean of the water-line length and the square root of the sail area. At the same time the New York Yacht Club adopted Mr. Hyslop's proposition, but in a form that bore less heavily on sail; the length to be taken twice and the square root

of the sail area but once, the sum of the two quantities being divided by 3 instead of 2.

As applied at the outset to the sloops and schooners of the American type, and to the growing fleet of cutters as well, this rule worked very satisfactorily, and was, perhaps, as good as any that could have been devised. Under its influence, the New York Yacht Club later changing to the Seawanhaka coefficients, and this same rule being adopted by many other clubs, was developed the great fleet of modern yachts designed by Cary Smith, Burgess, and the younger American designers — the yachts now looked back to as representing the best days of American yachting.

In a rough and empirical way the rule placed a fair valuation upon two of the essential factors of speed, — the length and the power; both breadth and draft, with the position of the ballast, being approximately measured through the sail area carried. In all the yachts of this era, sloop and cutter, small and large, the midship section was of considerable area in proper proportion to the rectangle formed by the breadth and draft; and the fact that a yacht had the power to carry a reasonable sail spread was of itself a guarantee of a certain amount of internal space available for cabin, galley, etc.

The introduction of *Gloriana* placed an entirely new value upon the important factor of length; and when this was followed by the fin keel *Dilemma*, in which breadth and draft were out of all proportion to the very small transverse area of the canoe-like hull, the rule became practically worthless. With the introduction of the scow type a few years later the weakness of the rule was further magnified, as a water-line length of 20 feet, as used in the rule, meant an effective sailing length of from 30 to 40 feet, with a proportionate sail area.

Although the fact that the Seawanhaka rule had outlived its usefulness was realized as early as 1892, and its positive and active influences for the production of a most extreme type of racing machine were generally discussed by yachtsmen from that time on, the racing owners and the clubs together opposed all efforts toward a revision of the rule; and it is only within a very few years that anything has been accomplished in this direction.

As the rule came to be tested in a new and unforeseen way through the adoption of extreme dimensions and forms, the question of construction assumed a new aspect. The original con-

struction of yachts differed in no way from the contemporary practice in commercial shipyards in other vessels of the same size. The construction of the *America* was that of the ordinary pilot-boat; and as yacht building became more of a specialty in the period immediately succeeding her, the standard of construction was lowered rather than raised, lacking the sterling qualities of the old-fashioned shipwright's work. The soft woods — white and yellow pine, cedar, and chestnut — were very largely used instead of oak, teak, and mahogany, as in British practice, with some saving of weight but at the expense of initial strength and durability. The arrangement of parts and the selection and disposition of fastenings, — in itself a material factor of good construction, — received little attention at the hands of yacht-builders between 1860 and 1880; and at the same time the shoal, flat form, further weakened by the centre-board slot and trunk, the pressure of the big board itself, the cabin trunk, covering a large portion of the deck area and depriving the hull of the necessary strength given by continuous deck beams, made of the large centre-board yacht a weak and dangerous structure. That representative vessels of this era, such as *Vesta*,

crossed the Atlantic in safety, in no way offsets the fact that the general system of construction was faulty in the extreme.

Mosquito (cutter), 1848, practically inaugurated the use of iron in yacht construction in England, but it was not until 1871 that it was introduced in this country through *Vindex;* and until the building of *Mischief*, in 1879, very few yachts, either sail or steam, were of other than the ordinary wood construction. Early in the sixties some fine examples of composite construction were launched on the Clyde, *Oimara*, the big yawl, and others of her time being afloat to-day; and this construction in a highly perfected form has been popular in Great Britain ever since. It is seen at its best in such yachts as *Queen Mab*, *Valkyrie II*, *Astrild*, and *Eelin*, all well known in this country. The keel, stem, and stern-post are of wood; the frames and floors are of steel; inside the wood keel is a "keel plate" or "dish-plate keelson," flanged into a trough-like form, to which the heels of frames and the floors are riveted; and with this and the frames as a backbone and ribs, a basket-work of deck beams, diagonal straps, floor beams, and gussets, with stringer-plates and sheer-strakes, make a light but extremely strong

and rigid frame. Over this basket of steel straps is laid the planking of the hull and the deck, the planking frequently being in two thicknesses.

While the common shipyard construction was almost universally followed in yachts, with occasional attempts at improvement on the part of some builders whose mechanical instincts and love for their art moved them to better things, the first real advance in construction is due to Mr. Cary Smith, who, beginning with such yachts as *Intrepid* and *Fortuna*, cut out much useless deadwood, studied more carefully the proportioning and arrangement of members, and insisted on thorough fitting and fastening. The Harvey cutters, *Oriva*, *Bedouin*, and *Wenonah*, introduced a new and very costly construction, the sizes of the frames being much reduced, they being in part sawn and in part steamed and bent, while the planking was in two thicknesses, carefully fitted, with marine glue or some similar substance between, and fastened with copper rivets. In lightness, strength, and durability this construction marked a great advance, but owing to its cost it never became general in this country.

The now all-important question of the weight of hull and spars as compared with the ballast

received no serious attention in America prior to the building of the 40-footer *Liris* in 1889. *Puritan*, *Mayflower*, and the other Burgess boats, except a few built of steel, were of merely a good grade of ordinary wood construction, — wood frames, keel, and planking, without diagonal straps or other auxiliary members now considered necessary.

In *Liris* the backbone was of oak, the frames were of steel angles, carried down into the oak keel in a way that subjected the lower ends to the certainty of corrosion in a few years of exposure to bilge-water and the acids of the oak. The planking was of two thicknesses, the inner cedar and the outer mahogany, with painted canvas between, both skins being riveted together between the frames and fastened to the latter by bronze screw bolts; the deck, also, being of two thicknesses. All the spars were hollow, each stick being sawn in half longitudinally, hollowed out, and cemented together with a mixture of quicklime and pot cheese. Through the weight thus saved in hull and spars, the yacht was enabled to carry some two to three tons more of lead in her keel than the Burgess boats of the same dimensions and displacement, this in turn

giving her from 300 to 400 square feet additional in the sail plan. Her light sails, too, were of Union silk, then but little known here. Owing to its experimental nature this construction was largely a failure, every spar gave way during the first season, two masts being lost; but in spite of this handicap and the hard competition of *Minerva*, the advantages of such a construction were demonstrated in the many victories of *Liris* over others of her class.

The first Burgess 40-footers were built with wood frames and single planking, but steel frames were used in *Moccasin* and *Gossoon* in 1890, and in the 46-footers of the following year. With thick single planking, wedged off from the frames by the necessarily heavy calking, these latter boats were failures at the outset, demanding very thorough strengthening to make them tight and safe, though they are all afloat and in use to-day. The construction of *Gloriana* was of this so-called "composite" method; but she had a double skin, a material element of strength in itself, though on trial it was found necessary to add steel straps inside under the deck beams.

With *Gloriana*, *Wasp*, and the Herreshoff fin keels was introduced a very expensive system of

construction, commonly called "composite," but lacking the thoroughness of the Scotch method with its complete interior basket, and at times failing badly, as in the case of the Herreshoff 70-foot class mentioned later. The efforts of every designer were concentrated in the reduction of the weight of hull and spars, in order that displacement might be reduced, and at the same time the proportion of ballast might be increased to give added power. The cost of yacht-building ran up within a few years to figures previously unheard of, the sizes of the yachts decreasing at the same time.

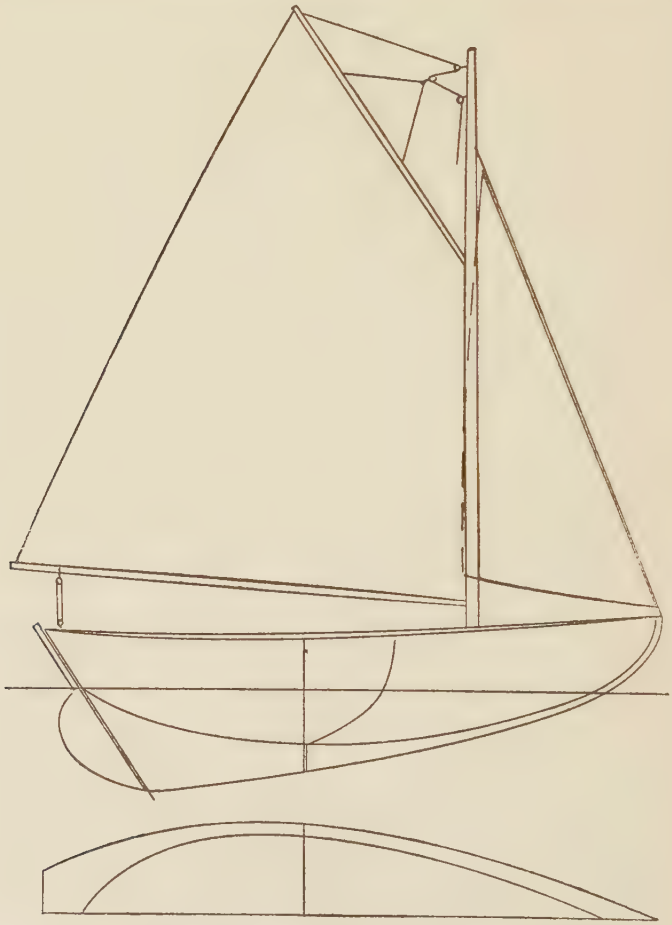
The formation of the several Cup-defending syndicates took from the regular class racing many good yachtsmen, who, though liberal in their support, soon tired of building a large yacht, or even a 40-footer, with the certainty that if she held together for more than one season she would be outclassed by a more extreme design, and outbuilt by still lighter construction, while from her extreme type she could not be sold for a cruiser. The result was that with the growing interest in the smaller racing classes even the wealthier yachtsmen abandoned the large for the small yachts, and, as the actual

amount involved was but small, offered every inducement to designer and builder to produce the fastest possible racing machine, without regard to first cost or final utility and sale value. Under this stimulus the cost of yacht-racing rose rapidly, while the boats were useless for other purposes, and even if they survived their brief racing life, were broken up in a few seasons.

As the building of freaks, large and small, became little less than an epidemic in yachting, a natural reaction followed on the part of the older and more conservative yachtsmen, and also some of the younger element, who demanded something more than continual outbuilding and match sailing.

One of the first evidences of this revolt was about Marblehead, where in 1892 the 21-foot length class was in existence, including some very extreme centre-board machines — for the time — and some expensively built fin keels. In the summer of this year there appeared two peculiar little boats, in general type similar to the keel fishing boats of the coast, but with the symmetry of form and the finished construction of the yacht. These two, *Nancy* and *Jane*, were designed by Stewart & Binney for Henry Tag-

gard and Herman Parker, members of the Eastern and Corinthian Yacht clubs, being intended



Lines of Original Knockabout, 1892.

for sailing in the rough water of Massachusetts Bay in all weathers, — a use which made the term "knockabout" most natural and appropriate. On a water-line of 21 feet and a breadth of 7 feet 2 inches, the bow was carried out into a very easy and graceful overhang, making up most of the excess in the over-all length of 25 feet 6 inches, there being no after overhang, except the small amount due to the moderate rake of the square transom. The draft was 4 feet 2 inches, of which about 18 inches was made up of an iron keel of 1070 pounds. The yacht was half-decked with an oval cockpit; the rudder was hung outside the transom; and beneath the foredeck was a cuddy, giving shelter in a sudden storm and dry stowage for gear. The rig was as peculiar as the hull: the total area of 400 square feet was distributed between a rather large mainsail and small jib, the latter with tack fast to the stem head, thus dispensing with a bowsprit. The hull was strongly constructed but neatly finished, and the complete yacht ready for sailing cost but $450, as compared with $2000 for a racing 21-footer, fit only for sailing in moderate weather.

These two boats were seen outside Marblehead Harbor, sailed by one man at times, in weather

when the larger yachts were glad to lie at their moorings. They were slow in light weather beside the racing 21-footers and some of the old cat-boats, but for real pleasure sailing at all times on such open waters they were unequalled. The name and type very soon became popular and the Boston designers were kept busy with new designs. In a short time a counter was added, the form was altered a little, lead keels were introduced, and the sail area was increased, each successive boat being faster than her predecessor but at the same time a little further from the idea which had called the type into existence. Early in 1894 the majority of the owners of the knock-abouts united for the protection of the class before it should be improved out of existence, and a simple agreement was made that all should unite in discouraging the over-development of the boats, observing some restrictions on dimensions, type, and ballasting. In the following year, with a great increase of the number of knockabouts, now recognized as an admirable racing class, the Knockabout Association was formed, with an extension of the restrictions, which ultimately included the sizes of frames, planking, etc.

As the racing continued, it attracted to the class

some of the most active of eastern yachtsmen, and Herreshoff and other designers were placed in hot competition to head the class. The result was the rapid reduction of displacement and midship section, with weight of hull in spite of the scantling restrictions, and the increase of the proportion of weight in the keel. Though the "fin keel" was specifically prohibited in the class, this competition, in which Mr. Herreshoff led, soon resulted in an expensive racing machine, of over thirty feet over-all length, with a section which was virtually that of the fin keel, except in that the metal plate was replaced by a deep, thin fin of wood.

Up to 1898 the sail limit had been 500 square feet, with not less than 400 square feet in the mainsail; but in that year a new class was organized, with 600 square feet of sail, a bowsprit being permitted. The original idea of a knockabout had entirely disappeared, and a new name, "raceabout," applied first by the writer in derision of this machine-ward tendency of even the best attempts for the preservation of desirable types, was very shortly adopted generally for the new class. The knockabout still survives to a certain extent as a cruising boat; but for some years past

the raceabout in an extreme form, both as to model and construction, has been popular in the East and on Long Island Sound as a racing class.

In 1894 a restricted racing class was started on Long Island Sound, the idea originating with W. Butler Duncan, Jr. The limits were 21 feet water-line, 31 feet over all, decked with open cockpit and not more than 600 nor less than 500 square feet of sail in mainsail and jib. Some thirteen boats were built from designs by Herreshoff, Gardner, Dyer, Waterhouse, and others, the Herreshoff boats being fin keels and most of the others of the centre-board type. The class was raced steadily for the first season, and though the interest then declined so far as some of the original owners were concerned, the boats in other hands were sailed for some years in various classes about the Sound.

In 1895 a larger class of cabin yachts, of 34 feet total measurement by the Seawanhaka rule, was started by the Larchmont Yacht Club under rigid restrictions, the yachts, both keel and centre-board, being designed by leading New York designers. The class was not as successful as at first anticipated, and proved rather short-lived.

In 1896 another class was started by the yachts-

men of Newport, the yachts being exclusively of one design and identical construction. They were designed and built by the Herreshoff Manufacturing Company, — fin-keel boats of double-skin construction with bronze fins, the length over all being 42 feet; water-line, 30 feet; breadth, 8 feet 3 inches; and draft, 7 feet. They were rigged as pole-masted sloops, with short bowsprits, and each was fitted with a small cabin forward, — a shelter in case of rain. The class was nominally a restricted but not a "one-design" one, and three outside boats by other designers sailed a few races; as a matter of fact, however, in its long life, from 1896 to the present time, it has been exclusively a Herreshoff one-design class. Some twenty yachts, all exactly alike, have been built and raced every season at Newport, some of them taking part in the races at the west end of the Sound early in the season. Both Corinthians and professionals have handled the sticks, and some have been sailed by ladies. The large number of races sailed by yachts of identical design and construction have served as most valuable tests of men and sails, the winning being dependent upon these two important factors. Where two men have changed boats after sailing

against each other for half a dozen races; or where, under similar conditions, one of the boats has tried a new mainsail, there has been no difficulty in locating the exact cause of such difference as might be apparent in the result.

In 1898 the Seawanhaka Corinthian Yacht Club established a one-design class of 21-foot knockabouts, designed and built by W. B. Stearns, of Marblehead, some twenty boats being built for this club, and as many more for the Philadelphia Corinthian Yacht Club and other clubs.

The most ambitious attempt at a one-design class was made in 1900 in the Herreshoff 70-foot class, four yachts being built, — *Mineola II*, for August Belmont, *Virginia* for W. K. Vanderbilt, Jr., *Yankee* for H. B. Duryea and H. P. Whitney, and *Rainbow* for Cornelius Vanderbilt. Though originally intended as a model class of fast cruisers with ample cabin accommodation, the final design was of the extreme semi-fin type, with very full water-line, hollow midship section, and excessive overhangs. The dimensions were: length over all, 106 feet; water-line, 70 feet; breadth, 19 feet 5 inches; draft, 15 feet. The construction was nominally composite, and no expense was spared by the owners, but the straps, braces, stringer-

plates, and other members which make the life of a composite vessel, were omitted, there being little more than steel frames and wooden stem, keel, and planking. They showed serious signs of weakness in their first races, leaking very badly; and though persistently raced, the first season was spoiled by this defect. They were rebuilt in the following winter, at a heavy cost and with the addition of weight in the wrong place; but no additions were made to the first four, and the class is virtually dead.

A similar attempt was made in 1902, with the 60-foot one-design class of two boats, *Weetamoe* and *Neola*, designed by William Gardner. The construction was more expensive and elaborate than the Herreshoff 70-footers, the plating being Tobin bronze on steel frames, *Weetamoe* having in part bronze frames as well. The two were not conspicuously successful in their first season, and in the following winter they were lengthened five feet at the bow about the water-line; but no other boats were built to meet them.

The lower limit of the one-design class is reached in the Yankee dory, costing from $40 to $60, with mainsail and jib, and bought by the dozen or half-dozen by small clubs. From this

the classes range upward in size and cost, including many stanch and able little craft of twenty or thirty feet length and moderate cost, in which young Corinthians and yachtsmen of moderate means can find good racing and yet can cruise as well. Where cost is the first object, the one-design class is preferable, as the first outlay for both design and construction is reduced to a minimum and, under the rules of the class, alterations are prohibited. The restricted class, however, attains in part the same end and yet gives greater opportunity for experiment in design and the development of new ideas.

CHAPTER XIX

LIPTON AND THE THREE *SHAMROCKS*

THE avowed purpose of the donors of the America Cup was to promote friendly competition between the yachtsmen of different nations, and it may be assumed that this carried with it the permanent existence of one or more classes of large racing yachts from which challengers and defenders would be chosen. So far from this being the case, through many causes, some of which have been outlined in the preceding chapter, the building of large racing yachts, both cutters and schooners, has practically ceased in this country, and in Great Britain as well, in spite of the great encouragement given by King Edward VII and William III in the regular racing of such yachts as *Britannia* and *Meteor II.* At the present time, as for some years past, challenges come, not from yachtsmen like Mr. Ashbury and Sir Richard Sutton, who through experience in the ordinary class racing believe their yachts to be capable of winning the Cup, but from men of

ample means, but without yachting experience, who see in the publicity attending a Cup match a means of advertising themselves. Without searching too closely into his ultimate motives, it may at least be said that Lord Dunraven displayed no interest in yachting until within a very short time before his first challenge was issued; and when he appeared here several years later on the deck of a challenger, he knew little of yachting usage and precedent, or of the history of the Cup contests; nor was he fit to deal with such an important venture, involving a most thorough knowledge of the sport in all its aspects.

Following the Dunraven challenges and disputes British yachtsmen displayed no interest in the Cup. At times wealthy men, apparently attracted by the prominence which accompanies a challenge, took some of the preliminary steps, only to withdraw in the end. In 1898, however, a new aspirant appeared for Cup honors in the person of Sir Thomas Lipton, a very wealthy merchant, who, from a humble origin and starting at the very bottom as a grocer's boy, had through innate shrewdness and perseverance attained much prominence in England, being knighted as a reward for his liberal contributions to charity.

In view of his conduct in three different matches for the Cup, his liberal expenditures in yachting, and his many sterling qualities, it would be most unfair to class him as other than a thorough sportsman; but at the same time his yachting career practically began with his first challenge for the America Cup, and his yachting experience has been confined almost exclusively to one of the largest steam yachts.

The attempts of Sir Thomas to "lift the Cup" — to use the phrase coined by himself — resulted in three matches, in 1899, 1901, and 1903, the challenging yacht in each case being named *Shamrock*, with a distinguishing numeral, and being successively defeated. By a gradual evolution the Cup contests have become something apart from the regular course of yachting, with distinct characteristics of their own which deserve special study. The three *Shamrock* contests, in particular, have much in common and may be classed together.

In type of yacht the two nations have come completely together, all the Cup contestants of late years being keel cutters of great draft and over-all length, with the cutter rig, and in model of the semi-fin type, of extreme hollow section,

the fin and hull being practically two distinct elements, but structurally a unit. The hulls have been built of metal throughout, aluminum and the most costly bronzes being used freely. The rigs, in which hollow spars of steel have become an essential feature, are of the cutter type but modified in proportion and detail, with great improvements in the reduction of weight and the simplification and strengthening of all parts.

The dominating spirit of the three contests has been N. G. Herreshoff, who, backed by the confidence of different members of the New York Yacht Club, and working with no limitation on expense, has each year gone further in the perfection of the racing machine in model, construction, spars, rigging, and sails. The capacity of the Herreshoff plant has by degrees been extended until almost every part of a Cup defender is produced on the premises. The steel angles and bronze plates are received from the rolling mills; the cotton duck, all specially woven, also comes from outside mills; and the blocks and cordage are made outside the works. For the rest, the sails are cut and sewed under the watchful eye of the designer, the hull is built under his

hand, and outside assistance is depended on only for a part of the wire rigging.

In perfection of hull construction the Herreshoff defenders have surpassed the challengers in light weight and strength, and at least equalled them in outside finish; in rig they have been distinctly in advance, and the same may be said of the steel spars. The Herreshoff sails have been placed in competition beside those of Lapthorne & Ratsey, the leading British makers, with a difference of opinion as to the exact merits of each; but it is on record that the former have been uniformly on the winning boats. It is extremely difficult for one not personally in contact with them to determine the true merits of large sails; those which are faultless to the eye sometimes fail in actual work alongside of others which apparently lack both fit and finish. So many conditions enter into these Cup contests, the sails being but one of the many material factors, that it is impossible to say which of the two, if either, is distinctly superior. One thing can be said confidently, that the Herreshoff sails on the defending yachts have been stretched and hoisted on better spars, more thoroughly supported by the rigging; they

have received more thoughtful and intelligent attention at the hands of skipper and crew; and they have been trimmed with more care, skill, and good judgment in the races.

In the case of each of the six yachts built either on the Clyde or on Narragansett Bay, the most rigid secrecy has been maintained by owners, designers, and builders; and though some dimensions are of necessity disclosed through the official club measurement prior to the races, most of the dimensions and elements, with the lines, are withheld from the yachting public, thus making any deliberate and thorough comparison of designs impossible. In a general way the dimensions, and even the model, show no radical difference, except in the case of the defender of 1903, *Reliance*. The yachts have all been designed to the limit of 90 feet on the water-line, with only sufficient margin to make certain that this length will not be exceeded. In over-all length they measure from 128 feet in *Shamrock I* to 143 feet in *Reliance*, — the average being near the lower limit, — and in breadth they vary between 24 and 25 feet. The draft of none is positively known, but it ranges from 19 feet 6 inches to under 21 feet. The sail area has increased with

each successive contest, that of *Columbia* in 1899 being 13,131 square feet and that of *Reliance* 16,160 square feet.

The first challenge from Sir Thomas Lipton came through the Royal Ulster Yacht Club, of Belfast, Ireland, in the form of a notification by cable in August, 1898; and in the following month a committee of three members of the club and William Fife, Jr., the designer of *Clara* and *Minerva*, visited New York and in a short time arranged with the New York Yacht Club all the details of the match, the conditions being the same as those governing the Dunraven matches. Though the "dimensions" of the challenging yacht as specified in the Deed of Gift were requested, the committee gave only the water-line length, 89.50 feet, and no further demand was made for additional figures, of breadth, draft, etc. The date agreed on for the first race was October 3, 1899, or just thirteen months from the date of the challenge, proving the contention of some yachtsmen that the lack of ample notice was due not to the challengers but to the defenders, who in the past had refused to receive it.

The design was intrusted to Mr. Fife, and the

contract for the construction was given to the noted builders of torpedo-boats, J. I. Thorneycroft & Company, on the Thames. In spite of his many successes in small yachts, this was but the third attempt of Mr. Fife in the large class, his first, *Calluna*, in 1893, being a failure and his second, *Ailsa*, in 1895, being second to the older *Britannia* in that year, and only moderately successful later. The new boat was plated with manganese bronze below water and aluminum on the topsides, this light but weak metal being used freely for straps and internal braces about the deck where weight was most important. Her spars were of steel, except the bowsprit and spinnaker boom, and she had a sail area of 13,500 square feet.

The defence of the Cup was assumed by J. Pierpont Morgan, then commodore of the New York Yacht Club, with C. Oliver Iselin, the latter as part owner in the new yacht and having entire charge of her. At the same time, as one of the *Defender* syndicate, Commodore Morgan bore the expense of rebuilding and refitting her, placing her in the hands of W. Butler Duncan as "managing owner" for the season. The order for the new yacht was placed with the Herreshoffs, and

on June 10, 1899, *Columbia* was launched at the Bristol shops. With a keel, stem, and stern-post of cast bronze, the frames were of steel angles, disposed in the usual way, running from keel to deck at distances of about twenty inches apart; the plating was of manganese bronze, except the upper strakes, which were of steel. The use of aluminum was abandoned after the experiment with *Defender* in 1893.

Columbia's model was identical in a general way with that of *Defender*, but she was slightly wider, and her midship section, instead of a continuous S curve, showed a decided turn at the bilge, then a straight piece of floor, and below a rather sharp turn into the neck of the fin. The lead keel, of some ninety tons, was outside of the bronze keel plate, but the lower strake of the plating lapped down over the lead, reënforcing the bronze lag-screws which bound the keel and the lead together. The fore-and-aft lines were more fair and true than in *Defender*, especially in the counter. The most serious defect of *Defender* was the structural weakness in the wake of the mast, that heavy spar with its step on one occasion in the early races of 1895 nearly going through the bottom of the boat. To remedy

this, the mast step of *Columbia* was extended on the base to cover a large area of the bottom, distributing the strains just as a tree is rooted by many wide-spreading roots. At the same time this portion of the yacht was strengthened higher up by the building in of two "web frames" in place of the ordinary angles, — frames built up of light sheet steel flanged on the inner edges and riveted to the angles at the plating, these extending across the deck at the mast partners as well as down the sides.

Columbia was sailed by Captain Charles Barr with a crew of sailors from Deer Island, as in the case of *Defender;* Captain Urias Rhodes was selected for *Defender*, with a crew of Scandinavian yacht sailors. Captain Rhodes was an old and experienced yacht skipper, but he had no immediate experience with the modern racing machine, having been for some years in the older type of fast cruising yacht, sailing only a few races on the cruise. *Defender* was well handled through the season, but the superiority of the new boat was apparent from the start, and her selection was a foregone conclusion long before the formal trial races.

Captain "Archie" Hogarth, one of the leading

skippers of the Clyde, was selected to command *Shamrock I*, with Captain Robert Wringe, an English skipper, to assist him. Captain Hogarth's experience had been in smaller yachts, and there was no trial boat available for the tuning up of *Shamrock I* at home. She sailed from the Clyde on August 3, convoyed by her owner's steam yacht *Erin*, the New York Yacht Club having granted to Sir Thomas Lipton the privilege of towing, if found necessary. The voyage was made, partly under her jury rig, but mainly in tow, in fourteen days. The month intervening between her refitting and the races was spent in trial sailing outside Sandy Hook, under the active direction of Mr. Fife, and with Sir Thomas either on board or following on the *Erin*, — the yacht seeming to be very fast.

It is a remarkable fact in connection with the long series of Cup contests, that any particular season selected as likely to furnish suitable weather has proved exactly the reverse. This year October was chosen with the expectation of clear, cool weather and fresh winds; but the weather was thick and foggy and there was little or no wind. No less than thirteen separate trials were made before three races were sailed, all being

won by *Columbia*. *Shamrock* suffered through the serious illness of Mr. Fife, who was attacked by inflammatory rheumatism while the yacht was in dock just before the races, spending the next month in bed at his hotel, in ignorance of what was happening outside Sandy Hook. While this was a loss to the yacht, it was still more serious in that Mr. Fife had no personal knowledge of the good and bad points of his boat to guide him in the future.

Shamrock proved very fast in light weather, with her large area of good canvas, and she was well handled in the manœuvring; but she suffered from some serious mistakes of judgment on the part of her trio of skippers, for Captain Ben Parker, skipper of the Emperor's *Meteor II*, had run over to New York to have a hand in the "lifting" of the Cup. In handling under all possible conditions and circumstances she was outmatched by Captain Barr and his mate, "Lem" Miller, and the crew which they had trained. The most serious defect of *Shamrock I* was the weakness of her spars, which buckled badly in any force of wind and killed the sit of the sails, practically crippling her except in light weather. All things considered, her

model of itself was not as thoroughly tested by trial with a known boat as was *Columbia's* against *Defender*, she was not as thoroughly tuned up, nor was she well sailed, while the absence of Mr. Fife was a serious handicap. The model to the eye did not resemble the many fast Fife boats so well known in this country, nor did it do equal credit to its designer in combining beauty of line and form with the essentials of speed. In November *Shamrock I* was towed home, she and the *Erin* making the passage in seventeen days.

For his second attempt Sir Thomas Lipton selected Mr. Watson, giving him practically *carte blanche* as to expense, and asking only the fastest possible yacht which could be built. The basis of Mr. Watson's work was a series of carefully conducted experiments with models in the private experimental tank of the shipyard of William Denny & Brother at Dumbarton, near Glasgow. This line of investigation, though dating back some years in the designing of steam vessels for naval and commercial service, was new in its application to sailing craft, especially yachts; the problem of reproducing with even approximate accuracy the motion of a vessel heeled under

sail and heading obliquely to her true course was very different from the simple substitution of a tow-line for a propeller in a power-driven vessel, and it is impossible to estimate the true value of the work to the designer.

The model of *Shamrock II*, when seen in the dry-dock at New York, showed a close relationship in dimensions and type to the Herreshoff defenders, and also those individual features of a shoal body with a distinct fin, full water-lines, and cleanly swept diagonals, which mark all fast yachts of the present time. The plating, from the bottom of the keel to the deck, was of immadium, — a new alloy possessing great rigidity and tensile strength, — and the workmanship was equal to anything yet produced on either side of the water. Much has been said about the initial weakness and lack of structural strength in *Shamrock II*, but a close examination of the hull when it was demolished at the Erie Basin in November, 1903, failed to disclose either disintegration or strain, except in the case of some aluminum liners used between the frames and the plating.

The second Lipton challenge was dated October 2, 1900, and the first race was started on

September 26, 1901 ; in the intervening time much had been done on this side of the water. A syndicate was formed within the New York Yacht Club, the members being Vice Commodore August Belmont, Oliver H. Payne, Frederick G. Bourne, James Stillman, and Henry Walters, and an order for a new yacht was placed with the builders of *Defender* and *Columbia*. This yacht, *Constitution*, launched on May 6, was in model an improved *Defender*, the midship section resembling that yacht rather than *Columbia*. The good points of both yachts were combined in the new model, and to the eye her form showed an added finish and fairness.

The construction was a radical departure in yacht work, the ordinary transverse ribs or frames at close intervals only extending to the upper part of the fin ; above this a series of longitudinal stringers was used, with " web " or " belt " frames, built up of sheet steel and light angles, at four times the distance apart of the ordinary frames, or 6 feet 8 inches. The structural weights of all Cup yachts are so closely guarded by their designers that no exact comparison between this and the ordinary method is possible, but it is generally assumed that the added labor and expense

of the new method is fully justified by a gain both in weight and strength.

Constitution was placed in the hands of W. Butler Duncan and Captain Rhodes, who manned her with an American crew, partly from Deer Island and partly from the south shore of Long Island. At the same time E. D. Morgan volunteered to take charge of *Columbia*, selecting Captain Barr to aid him, with a Scandinavian crew. While showing well in the first races, *Constitution* in the end proved inferior to *Columbia*, and the old boat was selected for the second time to defend the Cup.

One of the important side issues of this match was the building of *Independence* by Thomas W. Lawson, of Boston, to aid in defending the Cup. Not being a member of the New York Yacht Club, Mr. Lawson's demand that he should be admitted to the trial races of the club on his own terms was refused by it; and on his part he would not agree to enter the yacht nominally in the name of a member of the club to comply with the technicalities made necessary by the club's rules. Consequently, *Independence* was able to meet the other two boats only in a few outside races.

Her many hard battles with *Constitution*

through the season had put *Columbia* in perfect form, doing much to offset the fact that she was a two-year-old boat. *Shamrock II* had been compelled to do her trial sailing practically alone. She was handled by Captain Wringe and Captain Sycamore, both now familiar with the Sandy Hook course from previous experience.

Five different trials were necessary before three races were sailed, all being won by *Columbia*, but by a small margin; *Shamrock II* being at times the leader. The result of this match may be summarized by the statement that in the three races the yachts sailed 90 nautical miles in all, the time being 12 hours, 18 minutes, 3 seconds, and *Columbia* winning by 3 minutes 27 seconds, actual, and 5 minutes 56 seconds, corrected, time. The average speed was consequently a little less than $7\frac{1}{2}$ knots.

Shamrock II was well handled in the main, but not so well as *Columbia*. The best work was in the manœuvring at the start and when in close company on the wind; off the wind she was by no means as well sailed as *Columbia*, whether under spinnaker or on a reach. In addition, several serious errors of judgment were committed, as compared with the almost faultless handling of *Columbia*.

For the third attempt Sir Thomas Lipton went back to Mr. Fife, challenging again in 1902 for a match in August of the following year, the general conditions being those of the previous matches. Again a syndicate was formed for the defence, the members being Elbert H. Gary, Clement A. Griscom, James J. Hill, William B. Leeds, Norman B. Ream, William Rockefeller, Cornelius Vanderbilt, Henry Walters, and P. A. B. Widener, and an order was placed with the Herreshoffs. Arrangements were made to fit out *Columbia* under E. D. Morgan's management, with Captain "Lem" Miller as skipper, and *Constitution*, under the management of Mr. Belmont, with Captain Rhodes in command. C. Oliver Iselin again consented to undertake the management of the new yacht, *Reliance*, selecting Captain Barr as skipper.

Shamrock III, the new challenger, proved a beautifully modelled Fife cutter, of the latest semi-fin type, but in a way suggestive of *Minerva* in the fairness of her form and her moderate power. She was plated with nickel steel, which in turn was coated with a white enamel, giving a smooth, hard surface but little, if any, inferior to the polished bronze of all the defenders from *Vigilant* down.

The question of the type to be selected by N. G. Herreshoff for his new model was generally discussed by yachtsmen in view of the development of the scow principle in the smaller classes, and it was no surprise when, in spite of all attempts at secrecy, it became known that he had made a radical departure from the sequence of *Defender*, *Columbia*, and *Constitution*. On approximately the same water-line, breadth, and draft, the depth of body was decreased, making less dead-rise, or a flatter floor, with a round bilge after the canoe form; and with this midship section as a basis, the fore-and-aft lines were carried out very straight and flat, giving a full water-line and very long overhangs, nearly 28 feet forward and over 26 feet aft. While *Reliance* cannot be classed as a scow, she is a wide departure from the more conventional forms of her predecessors.

As one consequence of her extreme area of water-line, she was enabled to carry to advantage an excessive sail plan, in all 16,160 square feet, or 2000 in excess of that of *Shamrock III*, and as much as the combined areas of *Puritan* and *Mayflower*. The construction was identical with that of *Constitution*. Beginning very early in

the season, these three yachts sailed many races, so that hulls, gear, and spars were thoroughly tested, crews were drilled, and sails tried and altered. *Columbia* failed to make as good a showing as when handled by Captain Barr; *Constitution* showed an improvement over her first season, but not sufficient to redeem herself as a defender; and *Reliance*, after doing good work in both light and heavy weather, was selected.

The first attempt at a race was made on August 20, and the third race was sailed on September 3. Between these dates nine different attempts were made, and the yachts were started six times, three times failing to finish after half the course had been sailed. The weather on most occasions was light, the best race being that over the triangular course, in a light to moderate breeze, the two being in close company all day, and *Reliance* winning by a little over one minute, corrected time. *Shamrock* failed to score one race of the series, and in the final meeting she failed to finish, owing to a dense fog, though *Reliance* made the line in quick time.

In this match the question of type and model was involved to a more important degree than in any previous one since the meeting of *Genesta*

and *Puritan*. *Shamrock III* embodied the principle so apparent in *Minerva*, of moderate dimensions and form, and economy of driving power. While in one way an extreme, she was closely allied to the cutter type, and her success would have been followed by a reaction in favor of more normal ideas in designing. *Reliance*, on the other hand, as compared with *Columbia*, *Constitution*, and *Shamrock III*, represented a new and extreme step in the development of the racing machine, her whole form being confessedly bad for all purposes but Cup racing. The mere fact that she won three straight races has been generally accepted as satisfactory proof that all fast yachts in the future must follow her, rather than *Shamrock III*, in form and power.

The conditions of the races were such as to throw grave doubt on the accuracy of this popular verdict, by which one boat is recognized as a great success, and the other as a complete failure. As in all similar contests of recent years, the general management of the defender, as well as the individual work of her skipper at the wheel and in the care of his canvas and training and command of his crew, was immeasurably superior to that of the challenger. The latter was skil-

fully sailed, but there was not the care, the vigilance, and the attention to petty detail which was apparent in *Reliance*, just as it was formerly in *Columbia* and *Defender*. Then, too, the light weather was distinctly in favor of the yacht with the larger sails, as there was not a moment during the long series when she could not carry a club-topsail easily.

The whole tendency of international racing in all classes has been to minimize the importance of model and construction, and to increase the influence of the three persons necessary to the success of every yacht, the designer, owner, and skipper. The most important part of the designer's work is not the mere shaping of the hull and the planning of the construction, as all work according to the same general principles and any improvement by one is soon adopted by others; the main point lies above the deck, in providing a sail plan properly proportioned to the power of the hull, and a rig that, while reduced to the last limit of lightness, is at the same time strong enough to give the necessary support to the sails. In this work the mere copying of superficial details counts for nothing, but the designer must rely on himself and know that his rig is

right, and that it is as light as it can be made. In this respect the work of N. G. Herreshoff stands alone in racing yachts, just as the work of Cary Smith does in cruising craft.

Without an exception the owners of the different yachts which have attempted to regain the America Cup have known comparatively little about their yachts. Lieutenant Henn was a thorough sailor, an expert navigator and cruising yachtsman, and accustomed to racing after the old methods, but he never fully understood the great game of Cup racing. The others who preceded or followed him were still less familiar with it, depending of necessity upon their skipper or some friend. From the era of the Burgess boats the defence of the Cup has been in the hands of educated men, with ample time and means at their disposal, who have made it their business to study Cup racing as a scientific game rather than a sport. General Paine was neither a naval architect nor a designer, and he never touched the wheel on any of his boats; but his personality was one of the first causes of the success of *Puritan*, *Mayflower*, and *Volunteer*. He assumed a certain part of the work, distinct from that of designer and skipper, he studied

it until he knew it perfectly, and he made a success of it. Mr. Iselin has done the same in later years, living on his boats throughout the season, leading, inspiring, and encouraging those under him. It is the same story in other races in the small classes. Success has been won not by mere merit of model, nor even by skill at the stick, but by laborious work on the part of the owner as well as the skipper throughout the season.

There was a time when the work of the crack racing skipper was limited to the mere handling of a yacht in a race, but to-day it is different. There is still demanded quite as much skill in the handling of wheel or tiller, and quite as keen judgment of weather and as complete a knowledge of racing rules; but even above these is the ability to develop the innate qualities of a new yacht and a new crew. More than ever before, the successful skipper must be a practical engineer in a broad sense, having some idea of the strains to which his rig will be subjected, and being able to keep in perfect tune the delicate machine with which the designer has provided him.

CHAPTER XX

RACING AND CRUISING IN SMALL YACHTS

The *Genesta* challenge and the building of *Priscilla* and *Puritan* brought yachting into general prominence throughout the whole country, and the subsequent victory of the "Yankee" yacht established the sport forever on a national, in place of a local, foundation. The immediate stimulus was felt in those localities where yachting was already established, and in others where the natural conditions favored it; and a deep and lasting interest was awakened among the people at large in localities where the lack of suitable water made direct participation impossible. There was aroused on the part of the whole nation a feeling of pride in its patriotic yachtsmen, its skilful designers and bold sailors who had added to the long list of naval victories of the past a new and worthy record in a peaceful, but none the less serious and important, contest.

The match between *Spruce* and *Ethelwynn* ten years later, terminating in another victory,

extended the work by making yachting possible in localities where it was previously unknown. The direct effects of the America Cup contests were naturally limited to the yacht proper, decked craft of from 30 to 40 feet water-line upward, and navigable only in a couple of fathoms of water; but the fight of the 15-footers showed that quite as good racing was possible in yachts drawing but 6 inches at anchor and sailing with board down in 4 or 5 feet at most.

The publicity given to the sport by the daily press, and the large amount of technical detail published by the special yachting journals, aided greatly in introducing the sport in many remote and isolated localities.

At the present time the small yacht is quite as much a national institution as her larger sister, as numerous in point of mere numbers, and demanding the same high qualifications on the part of owner, designer, and builder. While the once universal cat-boat, with her simple and primitive rig and crude fittings, was nothing more than a "sail-boat," — to use a familiar term, — the modern small boat is in every sense a yacht. The rules under which small yachts are designed and raced are the same, or, if different, quite as

complete and elaborate as those of the largest classes. The design of a successful racing yacht of 15 or 20 feet measurement demands as much ability and study as that of a 70-footer; in fact, it is to the small craft exclusively that is due the very complicated and elaborate study of the scow type which now figures so prominently in all designing. The construction of the small yacht is no longer intrusted to any longshore boat-builder, but every detail is planned and studied with the same care as in the larger classes; and the best results yet obtained have been by the employment of the same elaborate calculations of strains and strength of materials that are necessary in the case of a big bridge or other important structure. While the demand for improvement in the small classes has produced many competent designers and builders among the professionals, the most original and successful work, both in designing and building, has been done by amateurs who are self-educated in yachting.

Until a comparatively recent date all materials and fittings were adapted only for yachts of medium and large size; the small sloops and cat-boats were rigged, fitted, and canvased, not

with what was suitable for them, but with what could be best adapted from material intended for larger craft. The rapid development of the sailing canoe which took place in the early eighties wrought a great improvement in this respect, as it introduced many new methods of construction, and led to the regular manufacture of a distinct line of small blocks, fittings, cordage, and sail-cloth. The first important and extensive experiments in hollow spars were made by canoeists; and they, too, were the first to use aluminum at a time when its cost and scarcity made such experiments very difficult.

The small racing and cruising boats introduced by some of the older canoeists in the early nineties, the immediate predecessors of the 15-foot class, led to material improvements in design and construction, to a larger class of hollow spars, and to the introduction of many new and necessary fittings. To this class is directly due the production of wooden blocks of small size but equal in quality to those in use on large yachts, and also the improvements in materials for small sails and in the cutting and making of such sails by the sailmakers.

With the way thus paved by canoeing, the

general use of the 15-footer in 1896 was soon followed by the systematic manufacture of every detail of yachting equipment in miniature, until at the present time the owner of the smallest racing or cruising yacht may fit and rig her as perfectly as though she were a 90-footer.

The successful racing of a sand-bag boat called for a high degree of skill and nerve on the part of the skipper; and at least a few of his numerous crew were required to possess other qualifications than mere weight and agility in tossing sand-bags. At the same time racing was in a crude and primitive condition, both as to rules and general usage, and as to those details outside of actual handling of the stick, which are now indispensable to success. Racing in the small classes to-day is an art, governed by the same rules and usages as in the largest yachts, and acquired only by long and careful study in addition to some natural ability.

Just how much an amateur must know of practical designing, construction, rigging, and sail-making to make him a successful skipper is an open question, much depending on circumstances; but it is a fact beyond dispute that while some may succeed through sheer ability in sailing, the more a man knows about his boat, the better he

will be able to sail her. Great as it may be, his skill at the stick and sheet will some day be matched against that of another as skilful as he in these matters and who has at the same time designed and built his own boat, rigged her, and tried her until he knows her every weakness.

The conditions of modern yachting, especially in the small classes, are such as to induce the Corinthian sailor, if at all in love with the sport, to study it in every branch. There are many who never rest content until they are able to design, build, rig, and sail their own boats; and others who, without going quite so far, are fully qualified to discuss a design with the designer, to criticise the construction as it progresses, and to make suggestions, and in the end to know the boat so thoroughly that they can develop all the speed of which she is capable.

The growth of the literature of yachting, both periodical and that of a more permanent nature, has been in proportion to the development of the sport; and the modern yachtsman's library includes everything, from a simple handbook instructing the beginner in the building of a skipjack or cheap one-design boat, up to elaborate treatises on design and navigation. With the aid thus

afforded, and the facility with which all supplies and materials may be obtained, the number of really skilful designers and builders has increased until there is hardly a lake or a broad stretch of river in any well-populated section which does not boast of its small yachts and, perhaps, of a club and fleet of more than local reputation. The demand for fast yachts and the competition and stimulus of the Corinthian owner and designer have done much to improve the work of the professional builder, as is well shown on the Minnesota and Wisconsin lakes. Some of the fastest yachts are purely of amateur design, while a really very high class of light construction is turned out by men who were not originally boat-builders, but Scandinavian sailors of some natural ability who, with the aid of amateur yachtsmen, have in time mastered the art of building.

The rules and conditions for the Seawanhaka cup and other trophies of the smaller classes were originally framed with great care by representatives of different nations and embody the accepted usage of the yachting world. These rules and conditions have been widely distributed among such clubs, in all parts of the country, as might be desirous of sending yachts to the trial races, the

result being that a very high standard of racing ethics is generally recognized.

In any locality where water, even in a comparatively limited area, is to be found, good yachting is possible to those who really love it. With a pond or small lake which will admit of a triangle of half-mile sides and having a minimum depth of even five feet, there can be established a fleet of any one of several different types in which the closest possible racing may be had. The small scow of about 12 feet water-line, such as may be built in a one-design class for $50 each, will give as hot racing as a pair of 90-footers; and each owner can find ample scope for his industry and intelligence in maintaining his boat and rig in perfect condition and getting a little more out of both than any of his competitors can do with theirs.

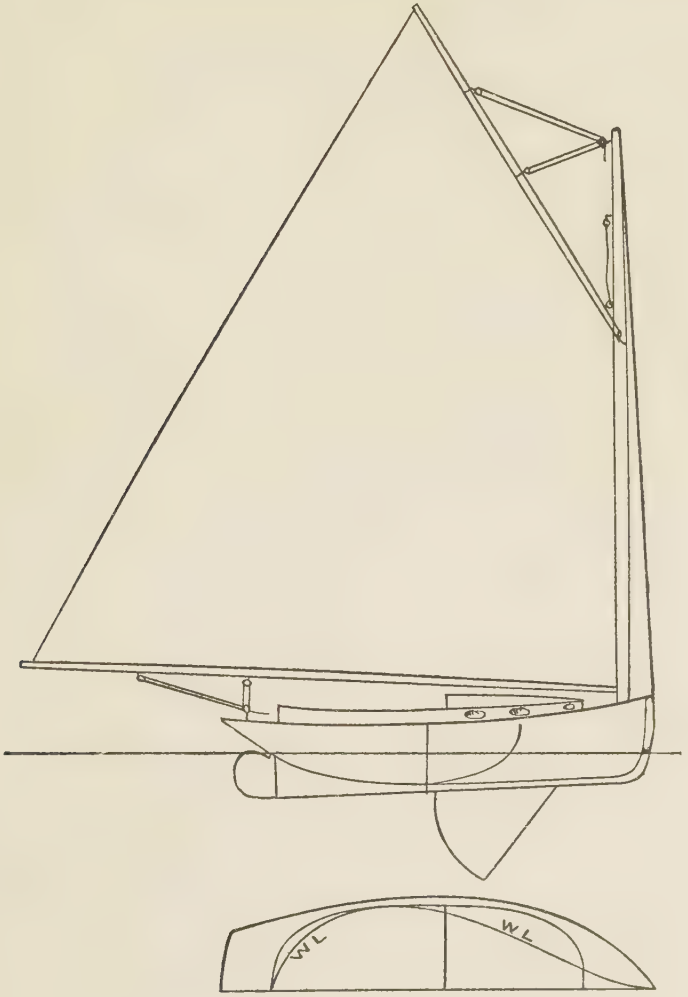
If the water is such as to afford opportunities for pleasure sailing or fishing, or if ladies are to be carried, a model with some freeboard and sheer, such as the first 15-footers, or the newer 17-footers, of the Royal St. Lawrence Yacht Club, is preferable, — smart, able little boats, drier and more comfortable than the flat, flush-decked scow, and but little slower. Fitted with a metal centre-board,

either of these types may be permanently moored in less than a foot of water, and may be sailed in a depth of five feet, if no more can be had. Where deeper water permits, the same models, fitted with fin keels, drawing perhaps four feet at all times, offer certain advantages. Where absolutely necessary, the centre-board boats may be housed or drawn up on the beach with a simple set of ways.

With a depth of upward of seven feet over the sailing course, the yachts may be large enough to compete in association or inter-club races or for the Seawanhaka cup, opening a much broader field of sport, and bringing the club into close contact with other organizations. In many cases the one-design class will be found the most satisfactory, the cost being reduced and the interest in the racing being more sustained. Where the sailing men are also interested in designing, the restricted class offers a scope for amateur talent and at the same time some limitation is placed on that rapid outbuilding which will sooner or later kill the class. Where the club aspires to other than local races, the class must, as a rule, be an open one, under only such general conditions as govern the local association or some special trophy.

Where the local yachting ground communicates with other waters, the opportunities for the sport are greatly extended and cruising comes in as a rule. Where depth, both on the mooring ground and the sailing course, is limited as before, or where there are few facilities for hauling up, it may be necessary to adhere to the shoal-draft hull with centre-board; but even in this case a well-designed boat, with adequate freeboard and sheer and well-proportioned rig and ballast, should be fit for cruising on moderately open water. Even under these conditions the small scows are sometimes used for a purely racing class, being able and seaworthy enough, though wet and uncomfortable; but for a small and inexpensive class on open water the dory type has much to recommend it. These boats are built complete with mainsail and jib for $40 to $50; and while giving good racing in a one-design class, they are also fitted for fishing, rowing, and afternoon sailing, being both safer and more comfortable, especially for ladies, than the scow.

Where light draft is important, as in so many locations, on the anchorage grounds and in certain places, while an able model is required for



Cape Cod Cat-boat.

open and rough water, the Cape Cod cat-boat, — which, by the way, is now generally a sloop, — has many advantages in point of speed, handiness, and safety. It has been improved on in some modern types, but in its primitive form, as built twenty years ago, it was the best centre-board boat afloat. In even the smaller sizes, of 17 to 18 feet, a small cuddy is possible, giving a dry stowage for clothes and bedding and space for two to sleep, and with 3 or 4 feet more length a good little cabin may be had, though the inevitable centre-board trunk partly spoils it.

With a depth of 5 or 6 feet and upward to moor in, the keel type becomes possible, — the nearer to the primitive form of the first knockabout, the better for general use. If racing is the sole object, the class may be an open one, of 18 or 21 feet under the old Seawanhaka rule; a restricted one, such as the knockabout; or a one-design, — usually the cheapest. In many cases it is more desirable that the boats shall be capable of use in day sailing and week-end or longer cruises, for which the waters are fitted, as well as for racing, — to which end the knockabout rules or similar restrictions will be necessary to exclude freaks and racing machines.

The general tendency of yachting is to foster speed at the expense of all other qualities; and even where restrictions are in use, the yachts are commonly designed for racing first, with cruising as incidental. There are many yachtsmen, however, whose chief joy is in cruising in small craft, either single-handed or with one or two companions. To these a wide choice of craft is open. There are always to be found some ex-racers that are sufficiently good in model and strong in construction to warrant some outlay in alteration and refitting; the design perhaps being good for cruising, the planking of mahogany, the sails capable of alteration, and the fittings of bronze. When it comes to building, there are always good designs available in the yachting journals, the owner using his own discretion in arranging the cabin and altering the details to his special use. Even where cruising is the main end, it is desirable if in any way practicable, to build to the limits of some established class, as it is very likely that sooner or later the owner may wish to do a little racing, or he may have a chance to sell to some one who cares for both racing and cruising. It is a very common thing for even experienced

yachtsmen to build without regard to class limits because they have no idea of racing, when with a little thought and planning the design might have been conformed to a class. Ultimately the boat proves fast and the owner is seized with the racing fever, but through some slight excess of dimensions the yacht cannot enter in a class.

In every locality where yachts are at all numerous there is always a demand for good Corinthians; and the mere fact that a man does not own a yacht, and does not know how to sail, is of itself no bar to the enjoyment of the sport. There are always owners who are on the lookout for good material, no matter how raw, provided it is good. If the learner is willing to have nothing to say except to ask absolutely necessary questions, to observe carefully what goes on about him, to work hard at whatever he is told to do, and to learn all the little things thoroughly as they present themselves, he will never be a nuisance, and he will soon be able to help in earnest. He must take things as they come, never grumbling at those numerous discomforts and inconveniences which are inevitable; he must do a full share of the work will-

ingly; and he must never worry about getting back ashore. If really ambitious, he can pick up a good deal by reading and study that will help him in applying the everyday work as an amateur deck hand to the broader knowledge of yachting in all its branches.

The racing side of yachting has always been the more prominent and conspicuous, and the specialization of racing craft in recent years has insured for them almost a monopoly of the attention of designers; at the same time there has been a great improvement in cruising yachts and a multiplication of sizes and types. The range of cruising craft at the present time extends from the canoe yawl or canoe yacht of 17 or 18 feet length, easily handled by any experienced boy, and giving room for a companion of similar Spartan tastes, up to the auxiliary of several hundred tons; each separate size, down to the smallest, being designed by experts in its particular class, built with the same skill as is employed in racing yachts, and fitted with parts and gear specially designed and made for it. The man who really knows what he wants in the way of a cruising yacht, small or large, can find it to perfection, and is no longer compelled to put up with something

that is unsuitable in size, type, and fitting for his special work.

Yacht racing is of necessity a technical sport, to be followed successfully only by those thoroughly familiar with a complicated mass of technical detail. The practical experience of a century of yacht racing is to-day crystallized in the form of some two score of sailing rules, those of America, Great Britain, and other countries having a common origin and being closely identical. No man should attempt either the management of racing as one of a committee, or the sailing of a yacht in a race, until he is thoroughly familiar with the particular set of rules in use, and prepared to abide by them to the last letter. The plea is sometimes made that, as yacht racing is only followed for pleasure, the rules should be as few and simple as possible and less rigidly enforced than in matters of business. Such a course, if followed, will eventually result in discord and ill feeling and the end of all sport. A long experience has proved that only through a high standard of rules, so rigidly enforced as to secure their observance by all parties, can the sport be kept free from those dissensions which have at times been so harmful.

CHAPTER XXI

STEAM YACHTING IN AMERICA

The men who made American yachting were essentially seamen, loving the sea for itself and their yachts as a means of controlling and commanding its mighty power. To them sail was everything, and the thought of employing any such mechanical means as steam in their battle with Neptune was utterly foreign to their ideal of yachting. The Stevens family was one of the leaders in the experimental development of steam navigation and later in its commercial development. While following yachting as a pleasure, they were at the same time busy with experimental work in steam engineering and in both the business and technical side of steamboat work on the Delaware and the Hudson; but there is no record of any proposal on their part to adapt steam to purely pleasure purposes.

The origin of the steam yacht is due to men who cared little for yachting, but were commercially interested in steam navigation. What was

nominally a very extensive venture for the day was the cruise of the "steam yacht" *North Star*, built in 1852 for Commodore Vanderbilt, in which, accompanied by a party of twenty-five relatives and friends, he made a cruise of six months' duration in the following year, visiting many European ports. The *North Star* was really a wooden side-wheel passenger steamer of 2000 tons, and though specially built and fitted for this cruise, she was afterward used in regular passenger service. The whole venture was rather the personally conducted tour of a wealthy man than a yacht cruise in the true sense, and the story written by the clergyman who accompanied the expedition as scribe and chronicler is remarkable for its utter dearth of yachting flavor.

In 1854 another wealthy ship-owner, William H. Aspinwall, of New York, president of the Pacific Mail Steamship Company, had built for a special purpose a small experimental steamer, the *Firefly*. She was of wood, 97 feet 8 inches over all, 19 feet in breadth, 5 feet 2 inches in depth, and drew 3 feet 9 inches. She was built by Smith & Dimon, ship-builders, and was fitted with an experimental device, the invention of a Frenchman, — a paddle-wheel enclosed in an air-

tight box in the centre of the hull. The experiment was a failure and Mr. Aspinwall had the vessel fitted up as a yacht, her power being the oscillating marine engine with feathering paddle and a locomotive boiler. While she was naturally used for cruising, one important use seems to have been that of so many modern steam yachts, as a private ferry-boat between her owner's home, on Staten Island, and New York City.

Ten years later a steam pleasure vessel was planned and built for Leonard W. Jerome, a member of the New York Yacht Club and an owner of sailing yachts. The *Clarita*, built by Lawrence & Foulks, at Williamsburg, was of wood, 125 feet over all, 121 feet 9 inches water-line, 22 feet in breadth, 9 feet in depth, 11 feet 6 inches in draft, and of 231 tons. Her engines were built by the Novelty Iron Works, — two cylinders, 22 by 22 inches, with a screw 9 feet 6 inches in diameter. In the same year R. F. Loper, the yacht modeller, of Stonington, Connecticut, so well known from his sailing yachts, modelled the steam yacht *Wave*, and she was built by Reaney & Neafie, in Philadelphia. Her dimensions were: length over all, 87 feet; breadth, 19 feet 6 inches; depth, 7 feet; draft, 5 feet; with two cylinders,

high pressure, each 12 by 18 inches, driving a screw.

In 1868 Jacob Lorillard, one of the family of yachtsmen, modelled and had built for his own use a steam yacht, the second *Firefly*, of 67 feet over-all length, 62 feet water-line, 13 feet breadth, and 5 feet draft, with a screw, — the first of a large number of steam yachts, of gradually increasing size, which owe their origin to him.

Mr. Aspinwall's interest in steam yachts, though apparently accidental, was by no means transient. The *Firefly* was in course of time sold to the United States Coast Survey; and in 1871 she was replaced by the *Day Dream*, of composite construction, built at the Continental Iron Works, in Brooklyn, her length over all being 115 feet; water-line, 109 feet; breadth, 19 feet 6 inches; depth, 6 feet; draft, 7 feet. Her engines, vertical condensing, had two cylinders 14 by 14 inches, driving a screw 7 feet 6 inches in diameter. In 1873 the *Ideal* was modelled and built by J. B. Van Deusen for Theodore A. Havemeyer and Hugo Fritsch; in the same year the *America* was designed by Henry Steers and built at Greenpoint for Henry N. Smith; in 1875 the *Ocean Gem* was built by William Force, at Keyport, New Jersey,

for R. E. Ricker. The American Yacht List of 1874 records twenty-one steam yachts, of which one was English and one French, while several were merely small launches.

About 1876 the Herreshoffs began the building of small open and cabin launches, their work even then being characterized by originality and real merit. They perfected a light and compact compound launch engine and a coil boiler, also very light and compact; this plant being installed in hulls of appropriate dimensions and good model, and of a special construction materially lighter and in some ways stronger than the established practice. These hulls were built of many small parts, each of the proper wood, carefully fitted and fastened, making a very different boat from the ordinary launch, with heavy frames far apart and wide single-skin planking heavily calked. The business was gradually extended to include some of the first torpedo-boats, and then cabin yachts of sizes up to one hundred feet, and finally into a larger size of river steam yacht. The Herreshoff steam yachts have been distinguished from their origin down to the present time by light construction of hull, engines, and boilers, speed and many good qualities, with a total absence

of that grace and style which is commonly considered one of the essential attributes of a yacht.

The iron steam yacht of sea-going type was first introduced about 1880 and soon became very popular, the owners of the old racing schooners by degrees going in for steam, with its added speed and comfort; while many new recruits were attracted to the ranks of yachting by the fascination of owning a private steam vessel in which luxuries that were impossible in the sailing yacht might be had without the usually attendant inconveniences and discomforts of yachting.

The early steam yachts were in many respects defective. They were not the product of any deliberate system of designing, but were mainly built from models cut by men familiar only with sailing yachts, and whose adaptation of sailing forms to steam-yacht practice often produced grotesque results. Like the sailing models, the hulls were lacking in depth, they had very little freeboard, and, worst of all, they were built with a long cabin trunk that was in itself a serious element of danger in rough water and at the same time robbed the hull of the necessary strength given by a flush deck and continuous deck beams in the centre of the vessel.

As the steam yacht approached the dignity of a permanent institution, throughout the eighties, and its special adherents began to appear in numbers in every yacht club, the demand for speed became apparent. The effort on the part of modellers and builders to attain speeds well above the current practice, though in most cases unsuccessful, had a decidedly bad influence on the type of yacht produced. The early British steam yachts resembled their sailing sisters in solidity of construction and simplicity of finish, and were, above all else, eminently seaworthy. In the American steam yacht, however, the builder was called on first for large rooms, with elaborate furniture and fittings and a great weight of plumbing, marble steps, and baths, and similar inappropriate luxuries; and after this he was expected to realize a speed of fifteen to eighteen knots. The demands for cabin space naturally cut down the room left for machinery, boilers, and coal, the consequence being that powerful engines were crowded into spaces which left no room for the firemen and engine-room force, the bunker capacity was limited, and neither officers nor crew had decent living space. Even where the work of planning was intrusted to a compe-

tent yacht designer, the impossible demands of the owner made a partial failure almost inevitable; and where, as was commonly the case, no designer was consulted, the plans being produced by the combined talent of the skipper and some builder, the result was much worse.

About 1885 a new influence was felt through the importation by American yachtsmen of steam yachts built on the Clyde, the great centre of this industry. These yachts, such as *Amy*, 639 tons, were designed by professional yacht designers, like St. Clare J. Byrne and George L. Watson, who had made a distinct specialty of them; and they were originally built to the orders of experienced yachtsmen, mostly a conservative class of deep-sea cruisers. The yachts were remarkably successful vessels, and their faults in American eyes were due to the difference in requirements. They had not the speed demanded on short spurts between New York and Newport; the apartments were sometimes small, being intended mainly for sea cruising in a damp and cool climate; the hatches, skylights, and port-holes did not give sufficient air and light for Long Island Sound in summer. The finish, though usually rich and elegant and admirably fitted for a yacht,

with oak, walnut, mahogany, and teak joiner-work and leather upholstery, was entirely too plain for the ladies of the owner's family, who preferred carved and gilded woodwork, and a profusion of silken upholstery, panelling, and draperies, regardless of the effects of dust, dampness, and salt air on such a style of decoration in a vessel.

After the failure of several ambitious attempts in steam yacht-building, American owners began to import British steam yachts, which could be bought at a price far below that of building on the Delaware; but when once on this side, these same craft were usually reconstructed at a very great expense to meet the ideas of the new owners. This Clyde-ward movement was viewed with dismay by American builders, and attempts were made to stop it by the application of existing laws originally intended to affect only merchant vessels engaged in actual trade. In 1891 the steam yacht *Conqueror*, imported from England by F. W. Vanderbilt, was seized by the United States government in New York Harbor and placed in the custody of United States marshals, while her owner brought suit for her recovery. In this he was successful, compelling the government to relinquish the yacht after a

long lawsuit. The failure of this and similar attempts sent the American builders to Congress; and after several years of agitation the noted Payne Bill was passed in 1897, practically prohibiting the use of a foreign-built yacht by an American citizen in American waters. The bill, however, was so faultily drawn that it failed to effect its purpose, and though still a law it has never been enforced.

Not only has the purchase of second-hand British yachts, both sail and steam, continued with only a slight interruption following the enactment of the law, but many American owners have gone to Mr. Watson for steam yachts of a size, speed, and elegance of appointment previously unknown, the vessels all being built on the Clyde. Among them are such craft as *Mayflower*, *Nahma*, *Varuna*, and *Lysistrata*.

For some years past the designing of steam yachts has been in the hands of American designers, — Cary Smith, Gardner, Wintringham, Gielow, Seabury, and others, — and with a better understanding of the essential limitations of the problem on the part of owners a great improvement has been made. There have been comparatively few attempts to compete with British

designers in the field of sea-going yachts, the demand for this type being limited on the part of American yachtsmen; but a distinctive American type has been produced in such yachts as *Kanawha II*, *Hauoli I* and *II*, *Kismet*, and *Celt*. The type is designed for summer use about Long Island Sound and the eastern coast as far as Mount Desert, but mainly for short runs, such as the well-travelled route between New York and Newport, and for a sort of house-boat service in the immediate vicinity of New York city, picking up the owner in the afternoon and carrying him up the Hudson, outside Sandy Hook, or to Larchmont or Oyster Bay over night and landing him in New York early the following morning. A modification of this latter service is sometimes demanded, the owner merely using the yacht to carry him between home and office, living on shore at night.

The characteristics of this type are a speed of upward of twenty knots in the larger sizes, — the faster the better, — on such dimensions and displacement as will give large apartments for the owner, ample space for the engines, a reasonable bunker capacity, and will admit of a considerable weight of auxiliary machinery, such as the

electric lighting plant, ventilating, machinery, etc. The boiler question is simplified by the use of any one of several good makes of water-tube boilers, of compact form and light weight as compared with the old Scotch boiler. The engines, usually triple expansion, and in increasing number driving twin screws, are of special designs, — modifications of the torpedo-boat type, in which a certain amount of weight has been added to gain durability and to lessen the danger of an accidental breakdown.

Special attention is given to the arrangement. There is liberal headroom both below deck and in the deck houses, with many and large openings for light and air, and special provisions for forced ventilation; the division of space is such as to give large and comfortable state-rooms for the owner and his family, and usually a dining room of generous proportions for entertaining. The accompaniment to this, the galleys and pantries, are on a corresponding scale, with ample store-rooms and ice-boxes. As an important factor in the domestic economy of the yacht which owners now generally recognize, not only the officers, but the petty officers and crew, are well berthed in roomy and well-ventilated quarters,

with a liberal provision of bath-rooms and wash-stands. The plumbing of such a yacht is on a very extensive scale, running water, both cold and hot, and from the tanks or the sea, being piped to all parts, even the forecastle, with automatic waste and drainage system quite equal to that of a house on land with water main and sewer connections. While this type may to a certain extent be classed as but a cabin launch of extreme size, it is, nevertheless, of seaworthy form, and fitted to meet any weather which it is likely to encounter in its ordinary coasting service.

American yachtsmen, especially those doing business in New York, were quick to appreciate the great advantage which a private yacht has over all other means of transit, and from the days of the *Firefly* all types of steam yachts have been used for this purpose within a radius of fifty miles of the city. At the present time it is one of the sights of New York Harbor between May and November, from 8 to 10 A.M. and 3 to 5 P.M., when a procession of steam yachts of all sizes and speeds moves down the Hudson and the East rivers to the Battery Landing and other convenient points,

starting up again at the latter hours. The yachtsman is wakened in his suburban home at 8 o'clock. Donning a bath robe, he makes his way to the landing float, dives over, and after a short swim is at the companion-ladder of his yacht out in the stream. His clothing awaits him in a special apartment in the deck house, convenient to the gangway, with tiled floor and bath-tub for his fresh-water shower; by the time he has begun to dress, the anchor is off the ground and the yacht under way; breakfast is ready for him when his toilet is completed; and by the time he has disposed of it and skimmed through the morning papers the yacht has stopped and the launch is ready at the gangway to land him somewhere within a few blocks of his city office.

Many of the yachts used for this ferry service in the past were manifestly unfitted for it, some of them through a size that fitted them for a cruise around the world had they been properly designed, but which made them unsafe to themselves and to the other craft in Hell Gate, the East and the Hudson rivers abreast the city. Some large yachts are still used for this daily service as well as for longer runs, but there has

come into use of late years a special type of large speed launch, of 75 to 100 feet in length, with a small saloon, state-room, and galley for short cruises, but used mainly for daily runs of one or two hours' duration between home and office. Used as an auxiliary to a large cruising yacht, the twenty-mile launch does all the fast service, and the larger craft may consequently be designed for a sea speed of twelve to fifteen knots, giving greatly superior accommodation and enlarged radius of steaming at a less cost than the eighteen-knot cruiser.

The first steam launches were of limited utility, the government regulations placing them on the same footing as large passenger steamers and requiring licensed officers, both master and engineer. At the same time the machinery was heavy and bulky and could be placed only in the centre of the hull. Though the steam launch was in quite extensive use in the early eighties, it was at best an incomplete development. About 1885 a new power was introduced in the "naphtha engine," a small steam-engine of very simple construction, with a light coil boiler, naphtha from a tank in the bow being piped to the boiler, where it was burned under the coil, a part of the supply

being, at the same time, vaporized within the coil. This device had many advantages: it was free from government restriction; from its small size and light weight it could be placed in the extreme after end of a 12-foot boat; and the operation was so simple that it was readily mastered by any one of ordinary intelligence without a special knowledge of machinery and boilers.

The first use of the new power was in yacht boats, — gigs, cutters, and even dinghies being fitted up. Certain and reliable in its action under almost any conditions, the "naphtha engine" never tired, no matter how long the row from the yacht to the shore, or how heavy the wind and sea; and it required but one hand to run it, where the gig of an ordinary schooner yacht might require four or five hands for a long pull, leaving a small crew on board. Its use did not stop here, as it was soon installed in pleasure launches of 30 feet or so and upward, either open or cabin. These boats found ready favor, not only with old yachtsmen, but with many whose tastes lay in the direction of the water but who were unable to use a sailing yacht. Year by year they have increased in number, in size, and in quality, until for some years past they have formed a very important division of the pleasure fleet.

A still more recent development is the "explosion motor," "gasoline motor," "gas engine," or "internal-combustion motor," as it is called, in which the gasoline or similar hydro-carbon used for fuel is injected into the cylinder with a mixture of air and there exploded by the electric spark, thus doing away with boiler, furnace, and actual fire in the vessel. Though yet in its infancy in marine work, the gasoline motor is used almost all over the world in the propulsion of yachts and other craft up to 75 feet in length, the limit in size and power of engine and size of hull increasing every year.

The limited size and weight, the very compact form, the absence of fire, and the use of liquid fuel piped from a tank which may be placed at any distance from the motor, make this by far the most convenient power yet put in a vessel; and it is applied to-day to all classes, from the yacht dinghy, the small open launch, and the cabin launch, up to cabin craft of size and power that fit them for long cruises on open water.

There was a time, a few years ago, when the depressed condition of yacht racing, the growing demands on the time of even wealthy Americans, and the advantages of the power launch in point

of speed, excitement, and certainty of reaching port at a given time, worked toward the extinction of the sailing cruiser. Curiously enough, the introduction of the gasoline motor has operated to counteract this, and the outlook for real cruising in yachts of moderate size is more promising than at any time for many years. This motor is specially adapted for installation in the ordinary model of cruising yacht, a small two-bladed screw working in an aperture cut in the deadwood, while the motor itself is placed beneath the cockpit, or in a similar position in the run where the space is practically useless. As long as the wind serves, the yacht is under sail, with no smokestack to suggest any other power. When the wind drops, the gasoline motor is at once started and the canvas stowed at leisure. A very large number of sailing yachts, from the old Cup defender *Puritan* down to the smaller sizes of cat-boats, have been recently converted to auxiliaries with no alteration of hull or rig other than the sacrifice of a small amount of space under the cockpit, at best useful only for stowage. Some of the old 40-footers, for some years used for cruising, have been converted in the same way into very serviceable auxiliaries.

Even better results are attained as a rule when the yacht, whatever her size, is specially designed as an auxiliary; and many such craft, up to 75 feet water-line, have been built since 1901. Such a yacht as *Tekla*, designed in 1902 by Cary Smith, of 77 feet water-line, with steel hull, is a good example of the new type. She is in all respects a sailing schooner, but fitted with a Standard gasoline motor of 75 horse-power. With this power she can be got under way in an instant, no time being lost in firing up and raising steam. As long as there is wind, she is a sailing vessel; but in a calm or light head wind and contrary tide the motor is started, driving her at a speed that insures a punctual return to port. From this size downward to the single-hander of 18 to 20 feet water-line the gasoline motor is applicable, and its effect is already seen in an appreciable increase in the number of true sailing yachts as compared with the launches.

There is a gradual increase in the number of Americans who are learning to enjoy themselves according to the English plan, abandoning business when they are once assured of a reasonable fixed income, and devoting them-

selves to sport or travel. To this class the gasoline auxiliary already appeals through its adaptability to long cruises under sail and the handiness of the auxiliary power when in contracted waters and in harbor. To it also we may look in time for the development of an American type of steam yacht specially fitted for long cruises.

The average American, whether from choice or necessity, is so closely bound to business that his pleasures and his holidays must be enjoyed at speed, the element of leisure being a forbidden luxury. To such, even of the most moderate means, there are now available many types of small power craft, fitted for racing, for fishing, hunting, and general pleasure running, for cruising under sail or for a quick trip along the coast or on the Lakes to fill a brief summer vacation. Given even a moderate amount of both time and money, a man may select from the vast and varied pleasure fleet the exact size and type of yacht best suited to his specific use.

RECORD OF MATCHES FOR THE AMERICA CUP (1870 TO 1903)

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The dimensions given are necessarily approximate.

Date	Yacht	Owner	Rig	Type	Length		Breadth	Draft		Sail Area Sq. Ft.
					O. A.	L. W. L.		Keel	With board	
1870	First Match, Royal Thames Yacht Club.									
	Cambria	James Ashbury	schr.	K.	113	100	21	12		
	Magic	Franklin Osgood	schr.	C.-B.	84	79	20–9	6–3	17	
Aug. 8	Cup defended by fleet of 17 yachts. New York Yacht Club course, 40 miles. Wind moderate. 1. *Magic*, corrected time, 3–58–21. 2. *Idler*, 4–09–35. 3. *Silvie*, 4–23–35. 4. *America*, 4–23–51. 10. *Cambria*, 4–37–38.									
1871	Second Match, Royal Harwich Yacht Club.									
	Livonia	James Ashbury	schr.	K.	126	107	23–7	12–6		18,153
	Columbia	Franklin Osgood	schr.	C.-B.	107–10	96–5	25–6	5–11	22	
	Sappho	W. P. Douglas	schr.	K.	135–	119–4	27–4	12–8		
	Dauntless	James G. Bennett	schr.	K.	120–9	116–5	24–9	12		
	Palmer	Rutherford Stuyvesant	schr.	C.-B.	112–	101–	25–	8–4	20	
Oct. 16	New York Yacht Club course, 38 miles. Wind light. *Columbia*, corrected time, 6–19–41. *Livonia*, 6–46–55.									
Oct. 18	20 miles to windward and return. Wind fresh. *Columbia*, corrected time, 3–07–41¾. *Livonia*, 3–18–15½. *Livonia* protests *Columbia* for turning mark from wrong side — disallowed.									

Oct. 19	New York Yacht Club course, 38 miles. Wind fresh.								
	Livonia, corrected time, 4–02–25. *Columbia*, 4–17–35, disabled and withdrawn from races.								
Oct. 21	20 miles to windward and return. Wind moderate to fresh.								
	Sappho, corrected time, 5–36–02. *Livonia*, 6–09–23.								
Oct. 23	New York Yacht Club course, 38 miles. Wind moderate.								
	Sappho, corrected time, 4–46–17. *Livonia*, 5–11–44.								
1876	Third Match, Royal Canadian Yacht Club.								
	Countess of Dufferin	Maj. C. Gifford [1]	schr.	C.-B.	107		24	6–6	18
	Madeline	J. S. Dickerson	schr.	C.-B.	106–4	95	24–3	7–3	19–6
Aug. 11	New York Yacht Club course, 38 miles. Wind moderate.								
	Madeline, corrected time, 5–23–54. *Countess of Dufferin*, 5–34–53.								
Aug. 12	20 miles to windward and return. Wind light.								
	Madeline, corrected time, 7–18–46. *Countess of Dufferin*, 7–46–00.								
1881	Fourth Match, Bay of Quinte Yacht Club.								
	Atalanta	Alexander Cuthbert [1]	sloop	C.-B.	70	64	19	5–6	16–6
	Mischief	Joseph R. Busk	sloop	C.-B.	67–5	61	19–10	5–6	16
Nov. 9	New York Yacht Club course. Wind fresh.								
	Mischief, corrected time, 4–17–09. *Atalanta*, 4–45–29½.								
Nov. 10	16 miles to leeward and return. Wind fresh.								
	Mischief, corrected time, 4–54–53. *Atalanta*, 5–33–47.								

[1] "Managing owner" representing a syndicate.

RECORD OF MATCHES FOR THE AMERICA CUP (1870 TO 1903) — *Continued*

Date	Yacht	Owner	Rig	Type	Length		Breadth	Draft		Sail Area Sq. Ft.
					O. A.	L. W. L.		Keel	With board	
1885	Fifth Match, Royal Yacht Squadron.									
	Genesta	Sir Richard Sutton	cutter	K.	96–5	81–7	15–	13–6		7,150
	Puritan	J. Malcolm Forbes[1]	cutter	K.C.-B.	94	81–1	22–7	8–8	20	7,982
Sept. 14	New York Yacht Club course, 38 miles. Wind very light.									
	Puritan, corrected time, 6–06–05. *Genesta*, 6–22–24.									
Sept. 16	20 miles to leeward and return. Wind moderate to strong.									
	Puritan, corrected time, 5–03–14. *Genesta*, 5–04–52.									
1886	Sixth Match, Royal Northern Yacht Club.									
	Galatea	Lt. Wm. Henn, R.N.	cutter	K.	102–7	86–10	15	13–6		
	Mayflower	Gen. Chas. J. Paine	cutter	K.C.-B.	100–	85–6	23–6	9–9	20	
Sept. 7	New York Yacht Club course, 38 miles. Wind very light.									
	Mayflower, corrected time, 5–26–41. *Galatea*, 5–38–43.									
Sept. 11	20 miles to leeward and return. Wind moderate.									
	Mayflower, corrected time, 6–49–00. *Galatea*, 7–18–09.									
1887	Seventh Match, Royal Clyde Yacht Club.									
	Thistle	James Bell[1]	cutter	K.	108–6	86–5	20–3	13–10		8,968
	Volunteer	Gen. Chas. J. Paine	cutter	K.C.-B.	106–3	85–10	23–2	10	21	9,271
Sept. 27	New York Yacht Club course, 38 miles. Wind very light.									
	Volunteer, corrected time, 4–53–18. *Thistle*, 5–12–41¾.									

Sept. 30	20 miles to windward and return. Wind strong. *Volunteer*, corrected time, 5–42–56¼. *Thistle*, 5–54–45.									
1893	Eighth Match, Royal Yacht Squadron.									
	Valkyrie II	Lord Dunraven	cutter	K.	117–3	86–10	22–4	16–4		10,042
	Vigilant	C. Oliver Iselin[1]	cutter	K.C.-B.	124	86–2	26–3	13–6	24	11,272
Oct. 7	15 miles to leeward and return. Wind moderate. *Vigilant*, corrected time, 4–05–47. *Valkyrie II*, 4–11–35.									
Oct. 9	30-mile triangle. Wind moderate to strong. *Vigilant*, corrected time, 3–25–01. *Valkyrie II*, 3–35–36.									
Oct. 13	15 miles to windward and return. Wind fresh, increasing through race. *Vigilant*, corrected time, 3–24–39. *Valkyrie II*, 3–25–19.									
1895	Ninth Match, Royal Yacht Squadron.									
	Valkyrie III	Lord Dunraven	cutter	K.	129	88–10	26–2	20		13,028
	Defender	C. Oliver Iselin[1]	cutter	K.	123	88–5	23	19		12,602
Sept. 7	15 miles to windward and return. Wind light. *Defender*, corrected time, 4–59–55. *Valkyrie III*, 5–08–44.									
Sept. 10	30-mile triangle. Wind moderate. *Valkyrie III*, corrected time, 3–55–09. *Defender*, 3–55–56. *Valkyrie III* disqualified.									
Sept. 12	15 miles to windward and return. Wind moderate. *Valkyrie III*, withdrew at start. *Defender*, corrected time, 4–43–43.									

[1] "Managing owner" representing a syndicate.

RECORD OF MATCHES FOR THE AMERICA CUP (1870 TO 1903) — *Continued*

Date	Yacht	Owner	Rig	Type	Length		Breadth	Draft		Sail Area Sq. Ft.
					O. A.	L. W. L.		Keel	With board	
1899	Tenth Match, Royal Ulster Yacht Club.									
	Shamrock I	Sir Thomas Lipton	cutter	K.	128	89–8	25	20–3		13,492
	Columbia	C. Oliver Iselin[1]	cutter	K.	131	89–8	24	19–3		13,135
Oct. 16	15 miles to windward and return. Wind light. *Columbia*, corrected time, 0–00–00. *Shamrock I*, 0–00–00.									
Oct. 17	30-mile triangle. Moderate breeze. *Shamrock I* lost topmast and withdrew. *Columbia*, corrected time, 3–37–00.									
Oct. 20	15 miles to windward and return. Wind strong. *Columbia*, corrected time, 3–38–09. *Shamrock I*, 3–44–43.									
1901	Eleventh Match, Royal Ulster Yacht Club.									
	Shamrock II	Sir Thomas Lipton	cutter	K.	137	89–3	24	20		14,027
	Columbia	E. D. Morgan[1]	cutter	K.	131	89–8	24	19–3		13,211
Sept. 28	15 miles to leeward and return. Wind light. *Columbia*, corrected time, 4–30–24. *Shamrock II*, 4–31–44.									
Oct. 3	30-mile triangle. Wind fresh. *Columbia*, corrected time, 3–12–35. *Shamrock II*, 3–16–10.									

Oct. 4	15 miles to leeward and return. Wind light to moderate. *Columbia*, corrected time, 4–32–57. *Shamrock II*, 4–33–38.									
1903	Twelfth Match, Royal Ulster Yacht Club.									
	Shamrock III	Sir Thomas Lipton	cutter	K.	134–4	89–10	23	19–		14,154
	Reliance	C. Oliver Iselin [1]	cutter	K.	143–8	89–8	25–8	19–6		16,159
Aug. 22	15 miles to windward. Wind moderate. *Reliance*, corrected time, 3–32–17. *Shamrock III*, 3–39–20.									
Aug. 26	30-mile triangle. Wind moderate. *Reliance*, corrected time, 3–14–54. *Shamrock III*, 3–16–13.									
Sept. 3	15 miles to windward. Wind light, heavy fog on return course. *Reliance*, corrected time, 4–28–04. *Shamrock III* did not finish.									

[1] "Managing owner" representing a syndicate.

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